

PARTS CATALOG

FOR
ONAN ELECTRIC GENERATING PLANTS

•
HQ
Series



DIVISION OF STUDEBAKER CORPORATION
MINNEAPOLIS 14, MINNESOTA

921-7

Price \$1.00

Printed in U. S. A.

INSTRUCTIONS FOR ORDERING REPAIR PARTS

FOR PARTS OR SERVICE, CONTACT THE DEALER FROM WHOM
YOU PURCHASED THIS EQUIPMENT OR REFER TO YOUR NEAR-
EST AUTHORIZED SERVICE STATION.

TO AVOID ERRORS OR DELAY IN FILLING YOUR PARTS ORDER, PLEASE
FURNISH ALL INFORMATION REQUESTED.

REFER TO THE NAMEPLATE ON YOUR PLANT

1. Always give the MODEL & SPEC. NO. and SERIAL NO.

ELECTRIC Onan PLANT
MODEL AND SPEC. NO. SERIAL NO.

IMPORTANT - REFERENCE ABOVE NUMBERS WHEN ORDERING PARTS

A.C. VOLTS K.V.A. WATTS
P.F. AMPS CYCLES PHASE
D.C. VOLTS AMPS WATTS
GEN. NO. GEN. DATA NO.
R.P.M. USE VOLT BATTERY
MINNETAPOLIS, MINNESOTA, U.S.A. MADE IN U.S.A.

A229



For handy reference, copy YOUR plant
nameplate information in the spaces above.

2. Do not order by reference number or group number, use part number and description.
3. Give the part number, description and quantity needed of each item. If an old part cannot be identified, return the part prepaid to your dealer or nearest AUTHORIZED SERVICE STATION. Print your name and address plainly on the package. Write a letter to the same address stating the reason for returning the part.
4. State definite shipping instructions.

Any claim for loss or damage to your unit in transit should be filed promptly against the transportation company making the delivery. Shipments are complete unless the packing list indicates items are back ordered.

"Prices are purposely omitted from this Parts Catalog due to the confusion resulting from fluctuating costs, import duties, sales taxes, exchange rates, etc.

For Current parts prices, consult your Onan Dealer, Distributor or Parts and Service Center."

"En esta lista de partes los precios se omiten de proposito, ya que bastante confusion resultado de fluctuaciones de los precios, derechos aduanales, impuestos de venta, cambios extranjeros etc.

Consiga los precios vigentes de su distribuidor de productos "ONAN".

ORIENTATION

1

This complete generating plant is powered by a Continental 4 cylinder engine. Always supply the MODEL, SPEC., and SERIAL NO. of the plant with each inquiry or parts order.

This catalog contains:

- a. Pages 2 through 81. Illustrated main list.

MAIN LIST

Standard models use a automotive type starting motor (12 volt for Parts Key Nos. 1 through 5, and 6 volt for Parts Key No. 6). Parts for Standard models and several deviations from standard (models with options requested by the customer) are covered in the main list. If the plant in question is 6 or 12 volt cranked, select the desired parts from the main list.

- b. Pages 82 through 96. Supplementary list for "Pennsylvania Approved" Plants.

SUPPLEMENTARY LIST

For parts for Special "Pennsylvania Approved" plants refer FIRST to the Special Purpose Section near the rear of this catalog. These plants are all 36 volt exciter cranked. Parts NOT found in this supplementary list may be selected from the main list.

Parts in the Main illustrated list apply to the HQ series generating plants as listed in the Plant Data Table. Parts are arranged in groups of related items. Some groups of optional equipment are included. Each illustrated part is identified by a reference number corresponding to the same reference number in the Parts List for the particular group. Parts illustrations represent typical items and do not necessarily portray a particular part number.

General changes by the manufacturer which resulted in a model spec letter advance, include the following for standard 6 or 12 volt cranked plants. (For 36 volt exciter cranked plants see Supplementary List).

- Spec "A" - Original design. Wico Magneto (12 Volt Cranked plants) and Fairbanks Morse Magneto (6 Volt Cranked plants).
- Spec "B" - Ignition on AC plants changed to Fairbanks Morse Magneto.
- Spec "C" - Generator changed from exciter armature on same shaft with alternator rotor to exciter armature on separate shaft and removable from alternator rotor. On unhoused plants, voltmeter became standard equipment.
- Spec "D" - Circuit breaker changed from Westinghouse to Heinneman.
- Spec "E" - Ignition changed from Magneto to Battery. New governor with gear sweat on shaft.
- Spec "F" - On AC plants only: Intake and Exhaust Manifold changed from DOWN exhaust to UP exhaust; New Style Housing, Controls, and Generator Adapter on both Housed and Unhoused AC Plants.
- Spec "G" - Charge Generator, Regulator, and Ammeter changed to a 30 amp system. New Starting Motor has Solenoid and Mounting Bracket separate. Changed Start-Stop Switch and lower Engine Control Panel.

All part numbers in the list are ONAN numbers except those prefixed as follows:

- (CO) - Continental Motor Corps - Muskegon 82, Michigan.
- (AL) - Electric Auto-Lite Company - Toledo 1, Ohio.
- (FBM) - Fairbanks Morse & Company - Chicago 5, Illinois.
- (WCE) - Wico Electric Company - West Springfield, Massachusetts.
- (HOF) - Hoof Products Company - Chicago 38, Illinois.
- (CAR) - Carter Carburetor Corporation - St. Louis 7, Missouri

Many of the prefixed numbered parts are stocked by ONAN and distributors, however, these parts may be secured through the original manufacturer by the part number given in the parts list.

PARTS CATALOG

HQ SERIES

Compare your plant nameplate MODEL and SPEC NO. with the Plant Data Table. Select the Parts Key No. (1, 2 etc. in the last column) that applies to your plant Model and Spec No. This Parts Key No. appears in the description of parts that differ between basic models.

In certain instances it is necessary in the parts description to refer to additional description information such as the watts, cycles, etc. This information is available on the generator nameplate and should coincide with your model as listed in the Plant Data Table. Some parts descriptions refer to Spec A, B, etc. This refers to the LETTER at the end of the plant MODEL and SPEC NO. as shown on the nameplate. This Spec LETTER advances (A to B, B to C, etc.) with manufacturing changes.

UNLESS OTHERWISE MENTIONED IN THE PARTS DESCRIPTION, PARTS ARE INTERCHANGABLE BETWEEN THE VARIOUS PARTS KEYS.

"Right" and "left" sides of the unit are identified by FACING the Radiator (FRONT) End.

PLANT DATA TABLE

MODEL & SPEC NO. †		ELECTRICAL DATA					PARTS KEY NO.
HOUSED	UNHOUSED	WATTS	*VOLTS	CYCLES	PHASE	WIRE	
10HQ-1R/	10HQ-1R8/	10,000	120	60	1	2	1.
10HQ-3R/	10HQ-3R8/	10,000	120/240	60	1	3	
10HQ-53R/	10HQ-53R8/	10,000	120/240	50	1	3	
12HQ-53R/	12HQ-53R8/	12,500	120/240	50	1	3	
15HQ-1R/	15HQ-1R8/	15,000	120	60	1	2	
15HQ-3R/	15HQ-3R8/	15,000	120/240	60	1	3	
10HQ-4R/	10HQ-4R8/	10,000	120/208	60	3	4	2.
10HQ-54R/	10HQ-54R8/	10,000	120/208	50	3	4	
12HQ-54R/	12HQ-54R8/	12,500	120/208	50	3	4	
15HQ-4R/	15HQ-4R8/	15,000	120/208	60	3	4	
10HQ-5DR/	10HQ-5DR8/	10,000	120/240▲	60	3	4	3.
10HQ-55DR/	10HQ-55DR8/	10,000	120/240▲	50	3	4	
12HQ-55DR/	12HQ-55DR8/	12,500	120/240▲	50	3	4	
15HQ-5DR/	15HQ-5DR8/	15,000	120/240▲	60	3	4	
10HQ-6R/	10HQ-6R8/	10,000	480	60	3	3	4.
10HQ-56R/	10HQ-56R8/	10,000	480	50	3	3	
12HQ-56R/	12HQ-56R8/	12,500	480	50	3	3	
15HQ-6R/	15HQ-6R8/	15,000	480	60	3	3	
10HQ-7R/	10HQ-7R8/	10,000	220/380	60	3	4	5.
10HQ-57R/	10HQ-57R8/	10,000	220/380	50	3	4	
12HQ-57R/	12HQ-57R8/	12,500	220/380	50	3	4	
15HQ-7R/	15HQ-7R8/	15,000	220/380	60	3	4	
10HQ-150R/		10,000	250	DC	-	-	6.
15HQ-150R/		15,000	250	DC	-	-	

* - Reference to 120, 120/240 and 480 volt also applies to 115, 115/230 and 460 volt.

▲ - This is a delta-wound 240 volt model with one phase center-tapped. A limited amount of 1 phase 120/240 volt power can be utilized together with 3 phase power as long as no terminal current exceeds the rated nameplate current.

† - The number after the diagonal line (/) signifies standard or optional features. The LETTER ending the model and spec. no. is the Spec Letter and advances with manufacturing changes (A to B, B to C, etc.).

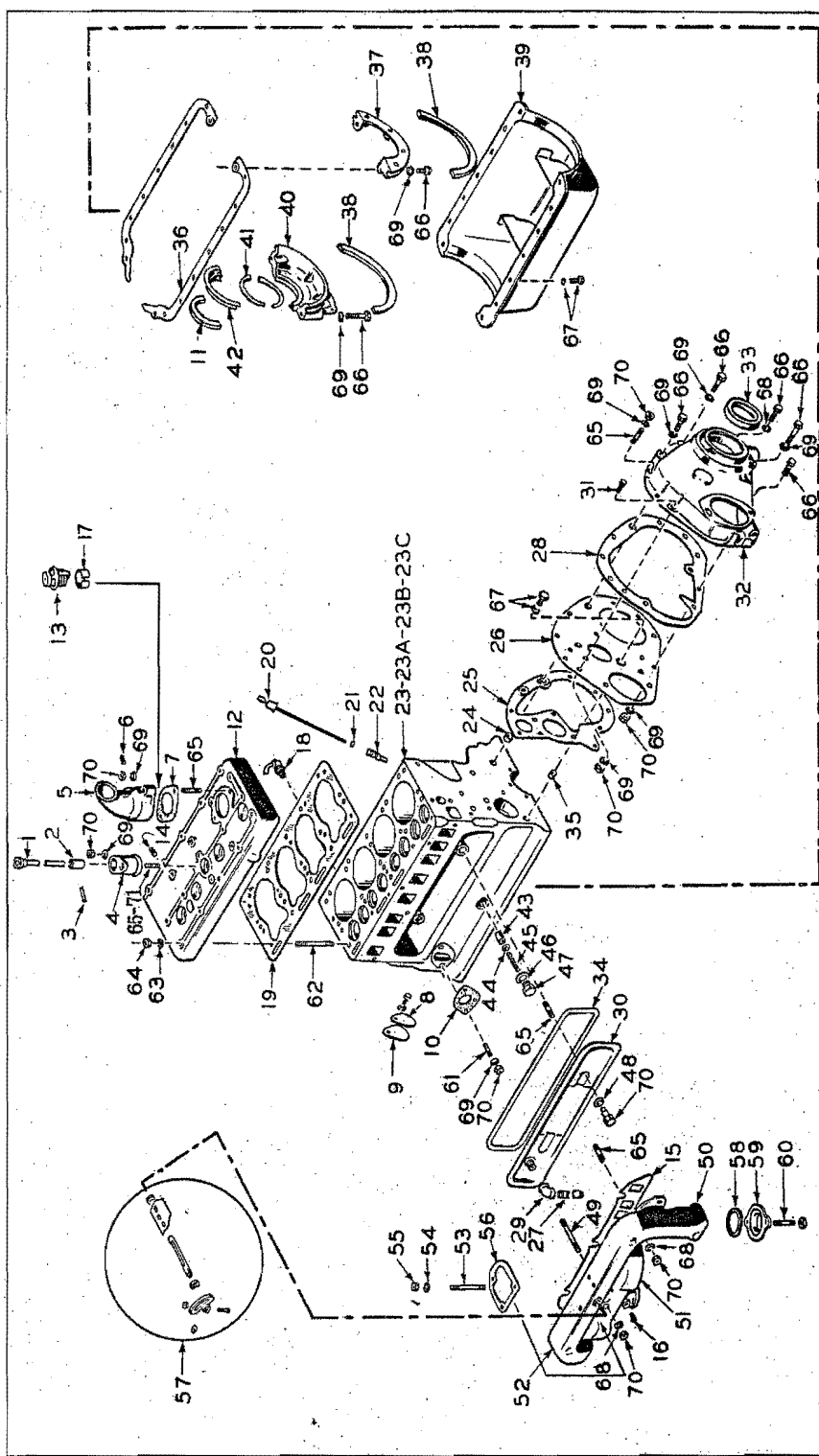


FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW

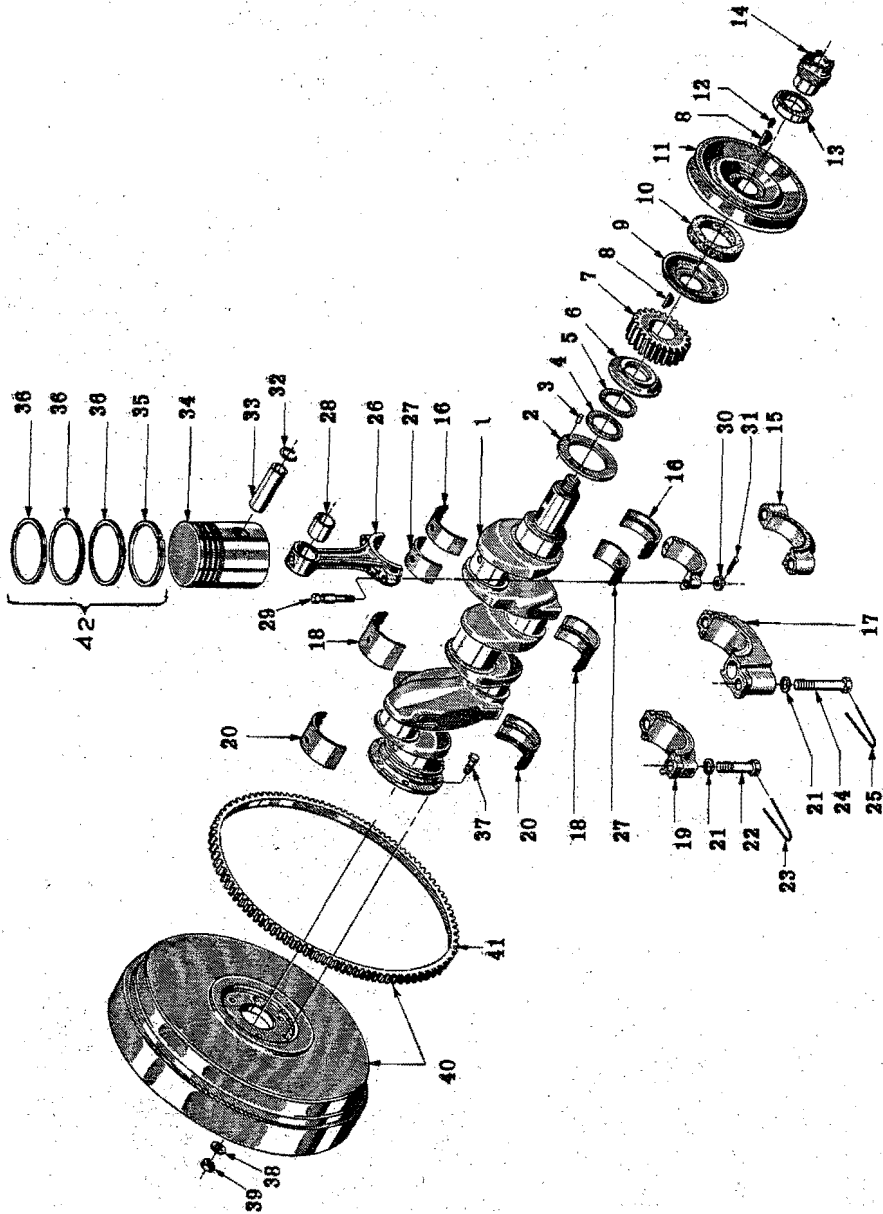


FIG. 2 - ENGINE PARTS GROUP - INTERNAL VIEW

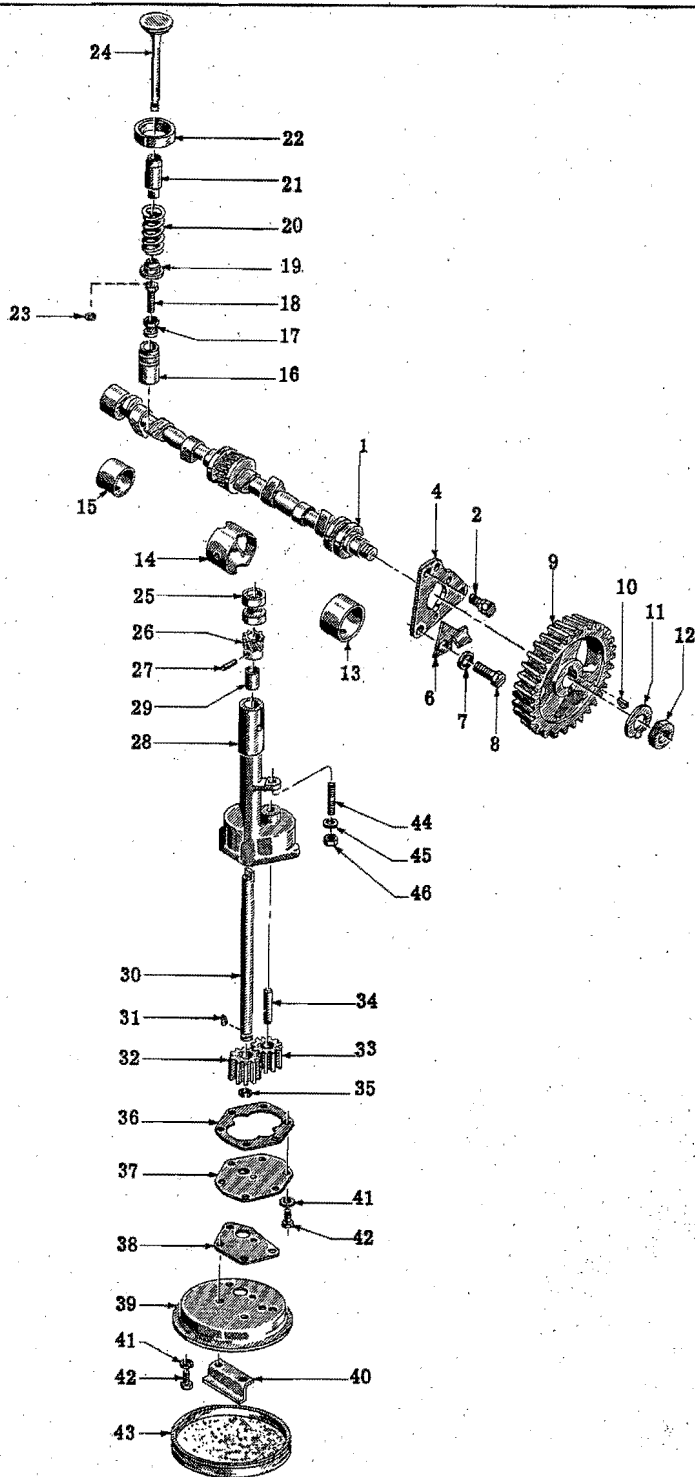


FIG. 3 - CAMSHAFT AND OIL PUMP PARTS GROUP

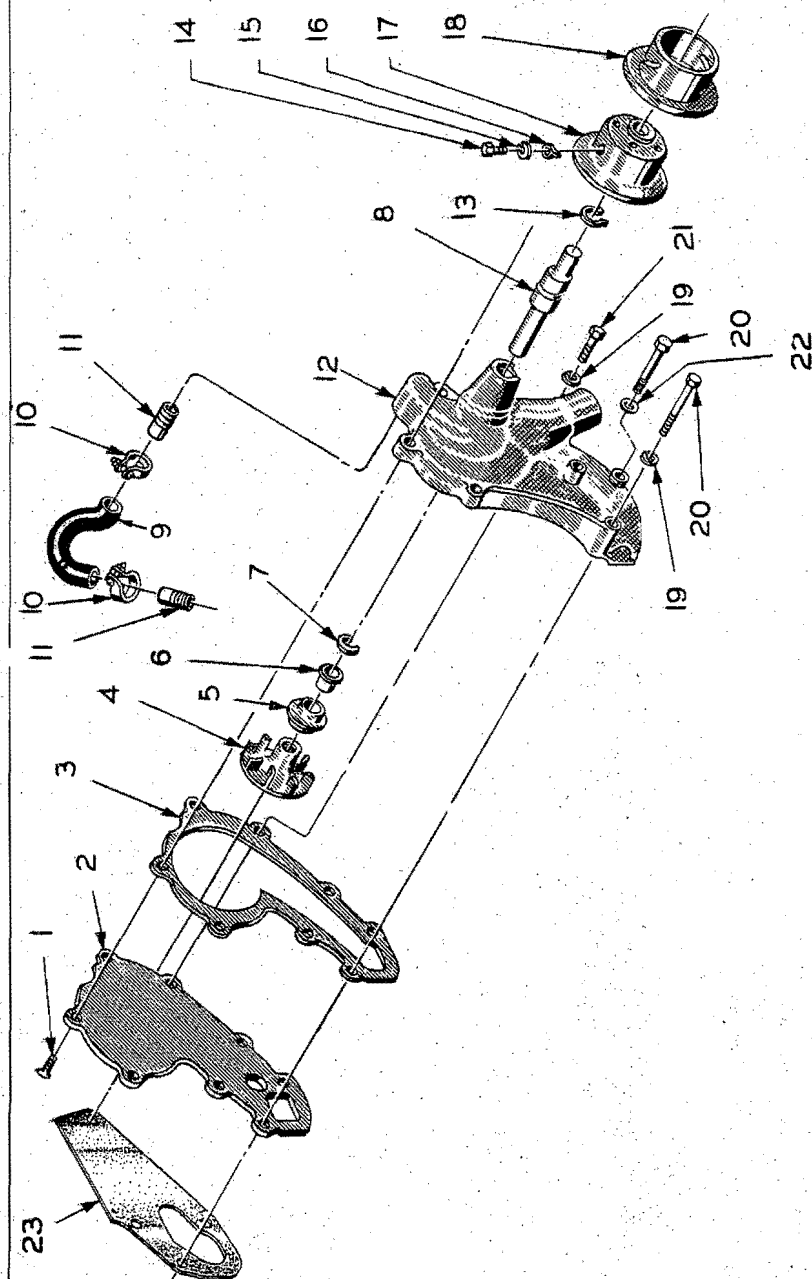


FIG. 4 - WATER PUMP PARTS GROUP

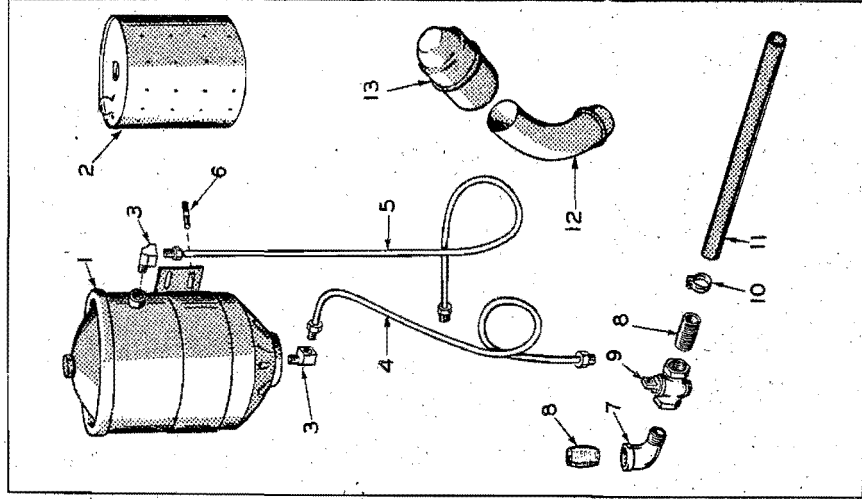


FIG. 5 - OIL SYSTEM GROUP

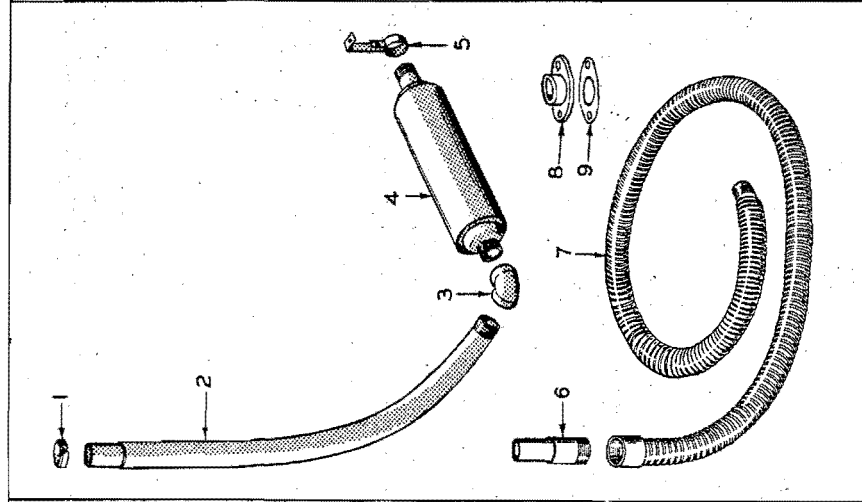


FIG. 6 - MUFFLER GROUP

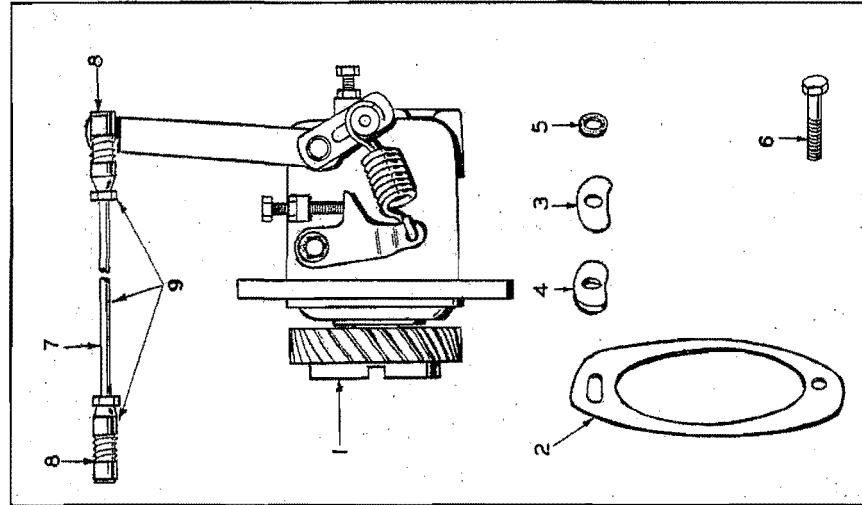


FIG. 7 - GOVERNOR
AND GOVERNOR LINKAGE GROUP

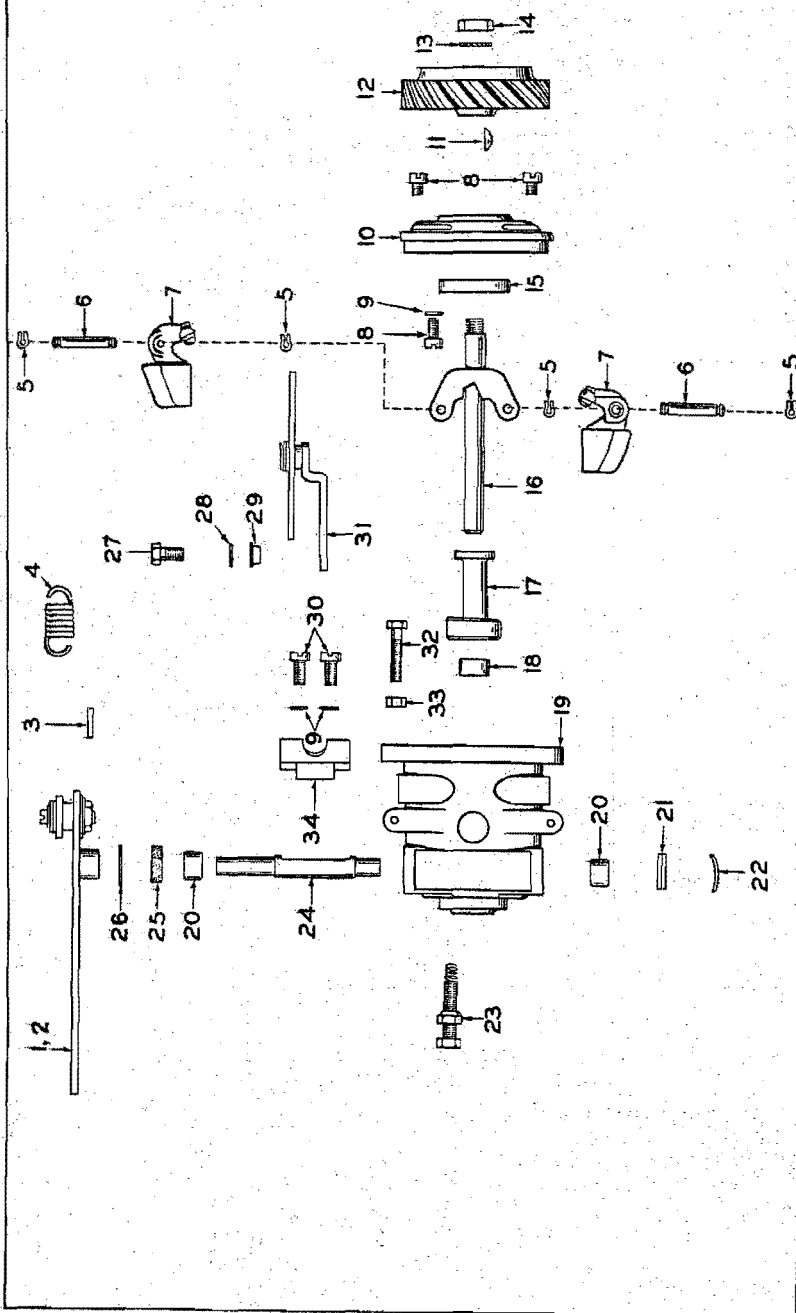


FIG. 8 - GOVERNOR PARTS GROUP - PLANTS PRIOR TO SPEC E

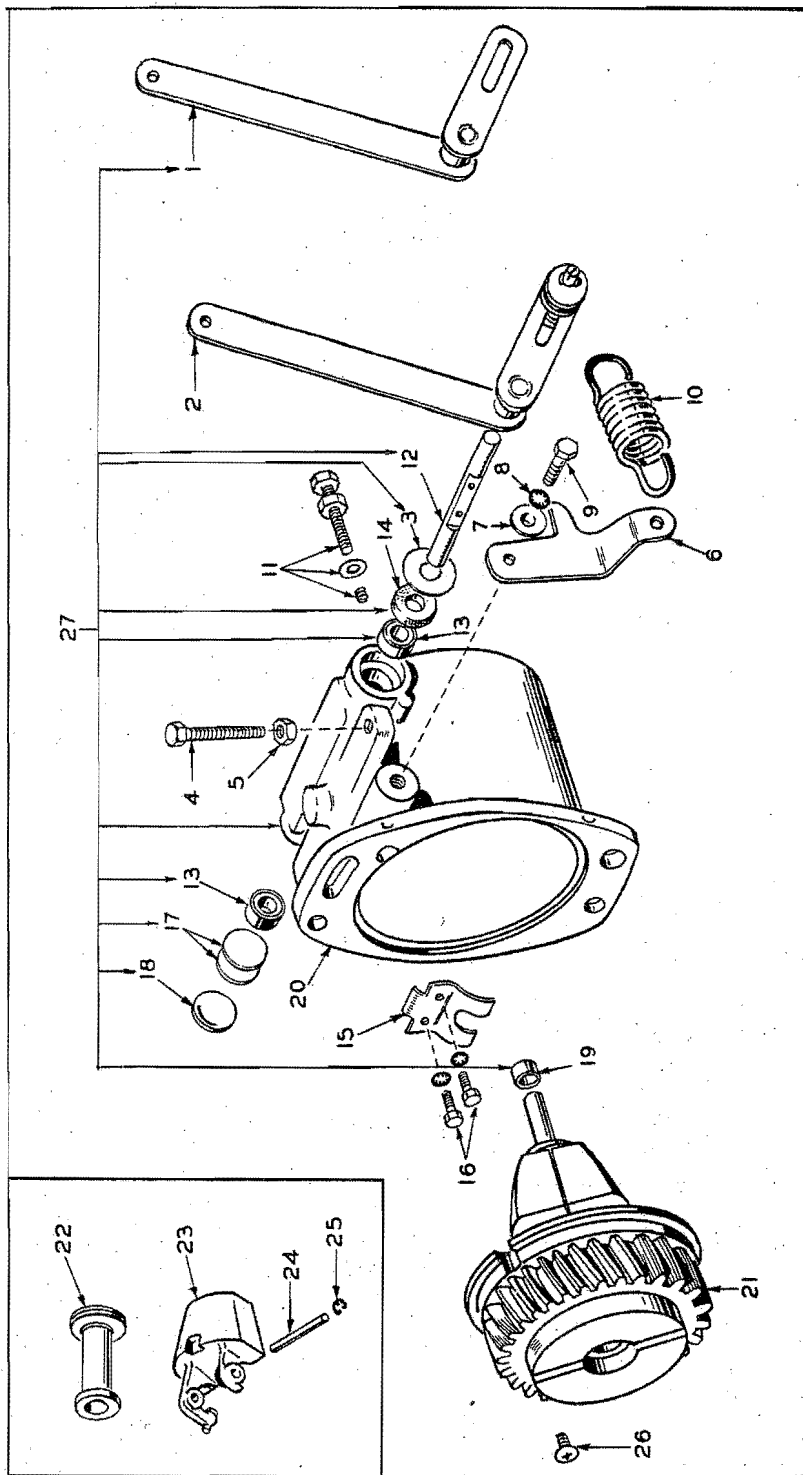


FIG. 8A - GOVERNOR PARTS GROUP - PLANTS BEGIN SPEC E

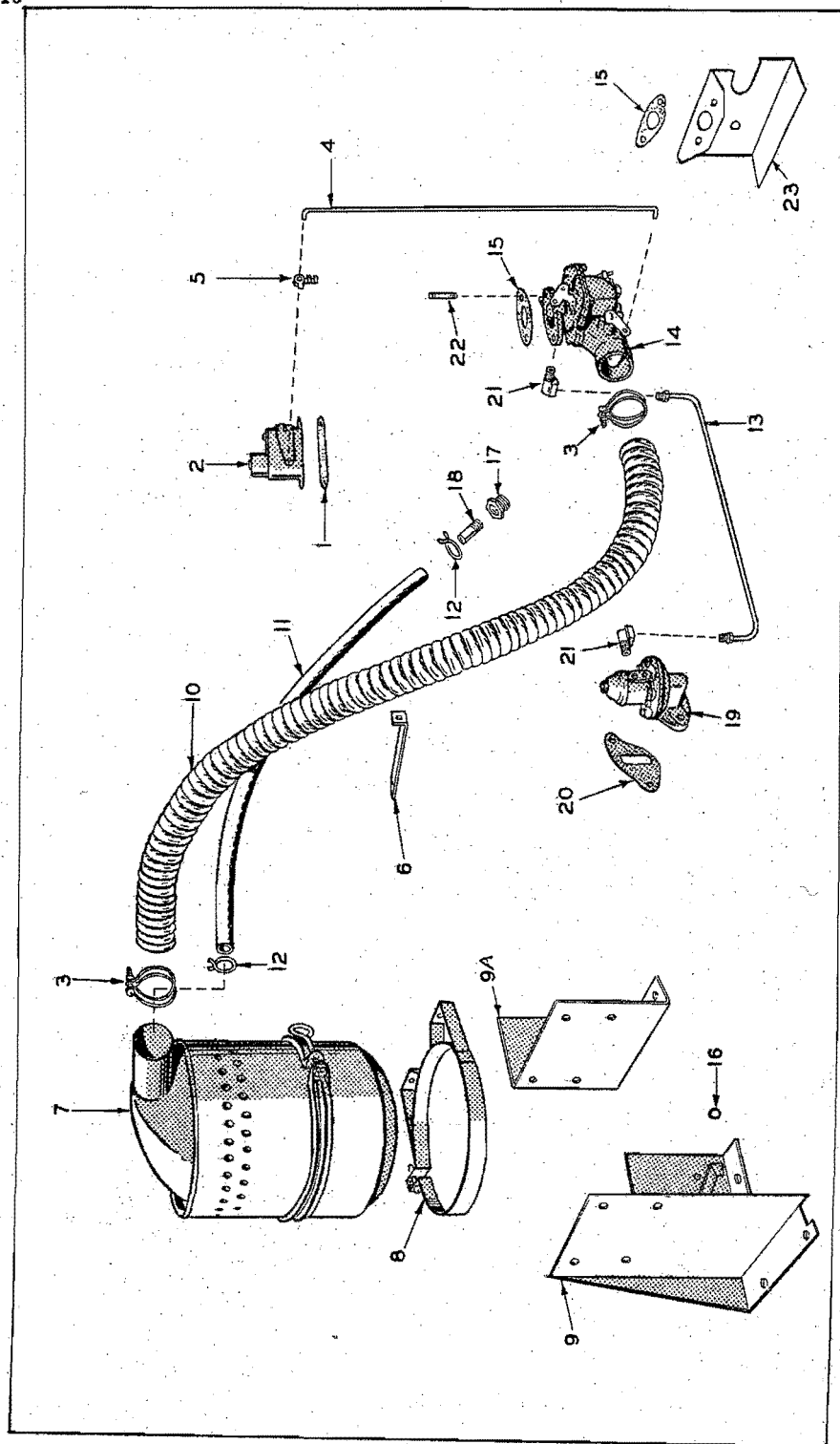


FIG. 9 - FUEL SYSTEM GROUP - GASOLINE

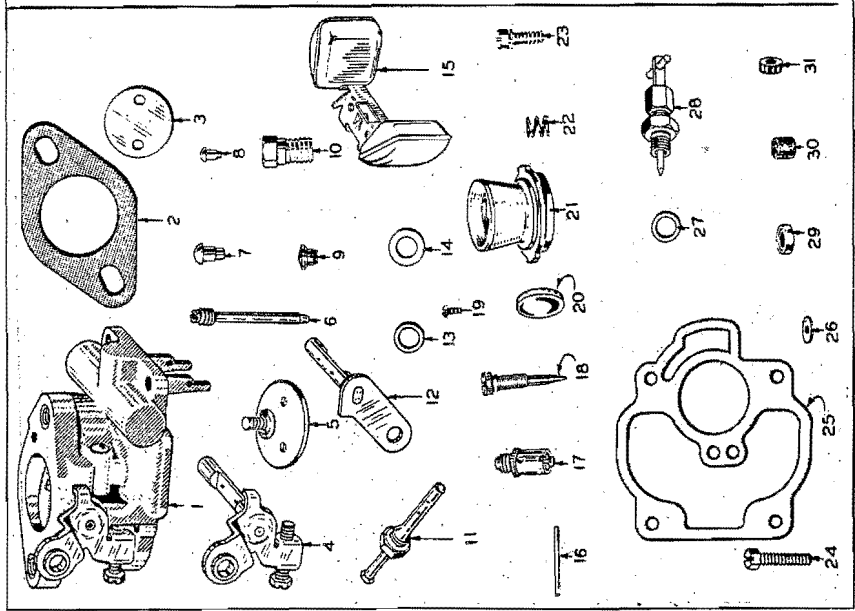


FIG. 10 - CARBURETOR PARTS GROUP - GASOLINE

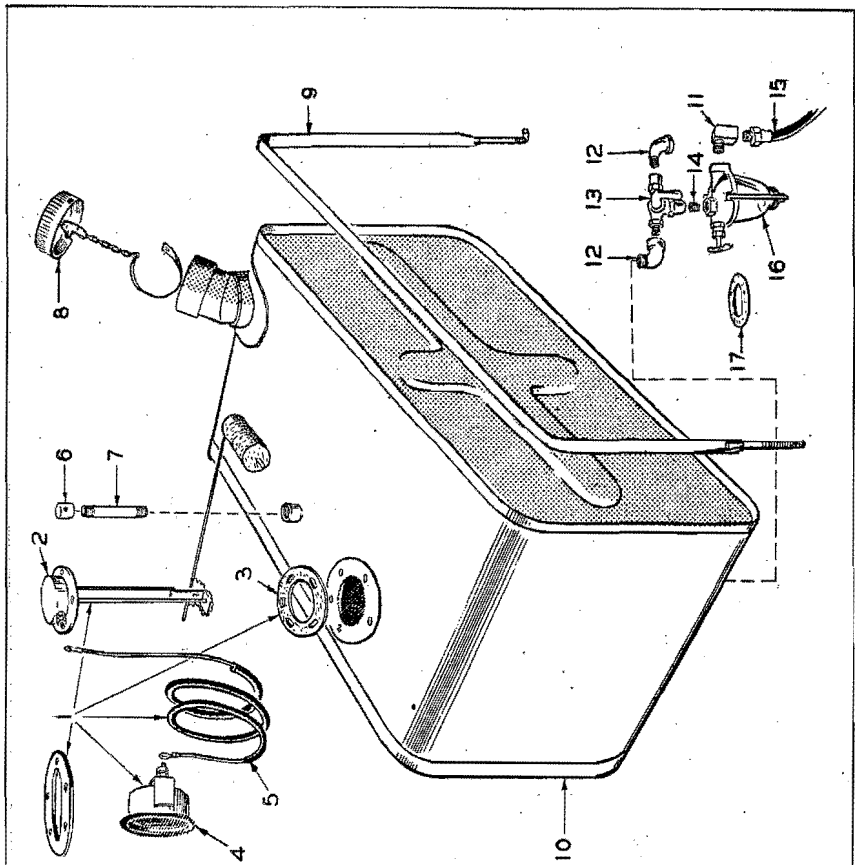


FIG. 11 - MOUNTED FUEL TANK GROUP - HOUSED PLANTS ONLY
(OPTIONAL EQUIPMENT)

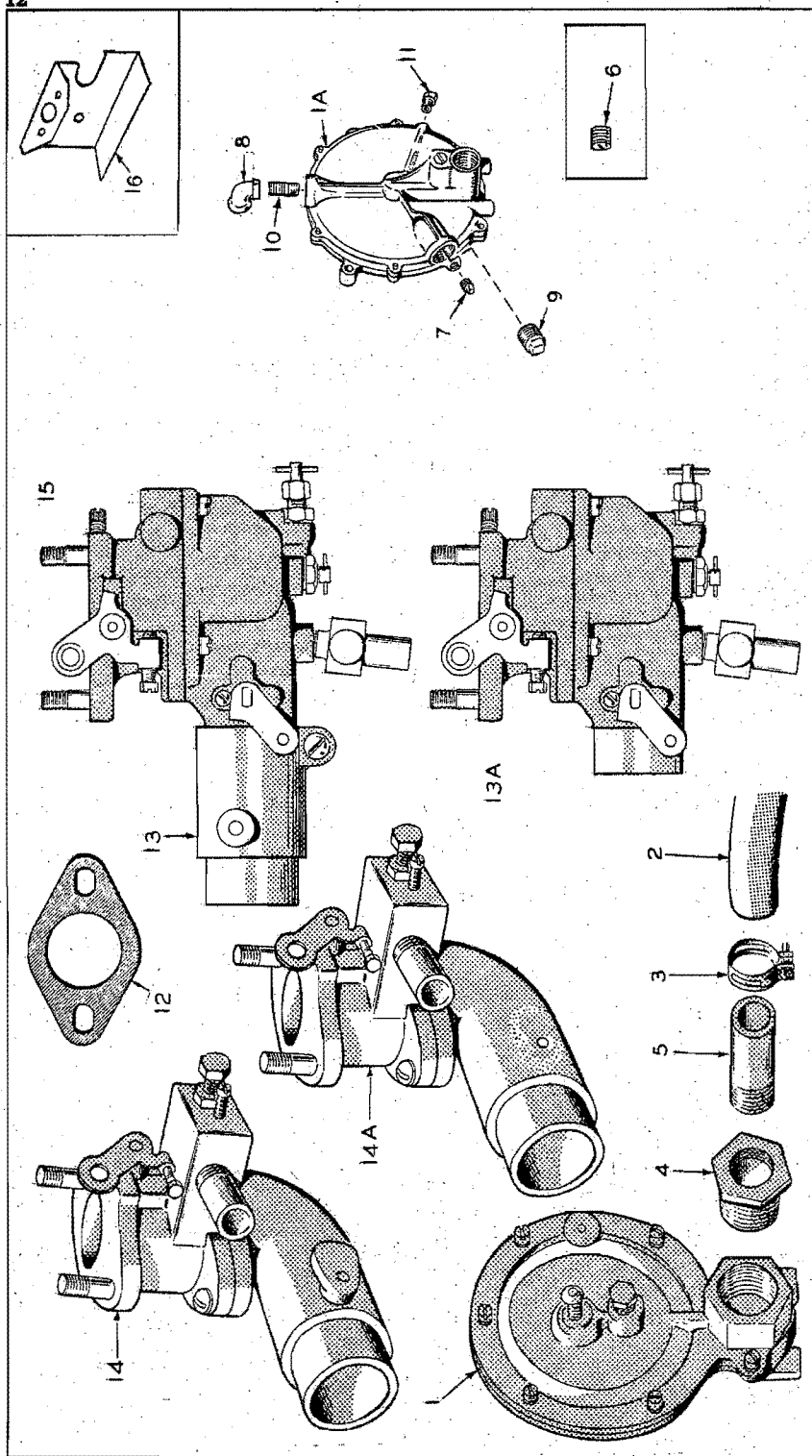


FIG. 12 - FUEL SYSTEM GROUP - OPTIONAL (GAS ONLY or GAS-GASOLINE COMBINATION)

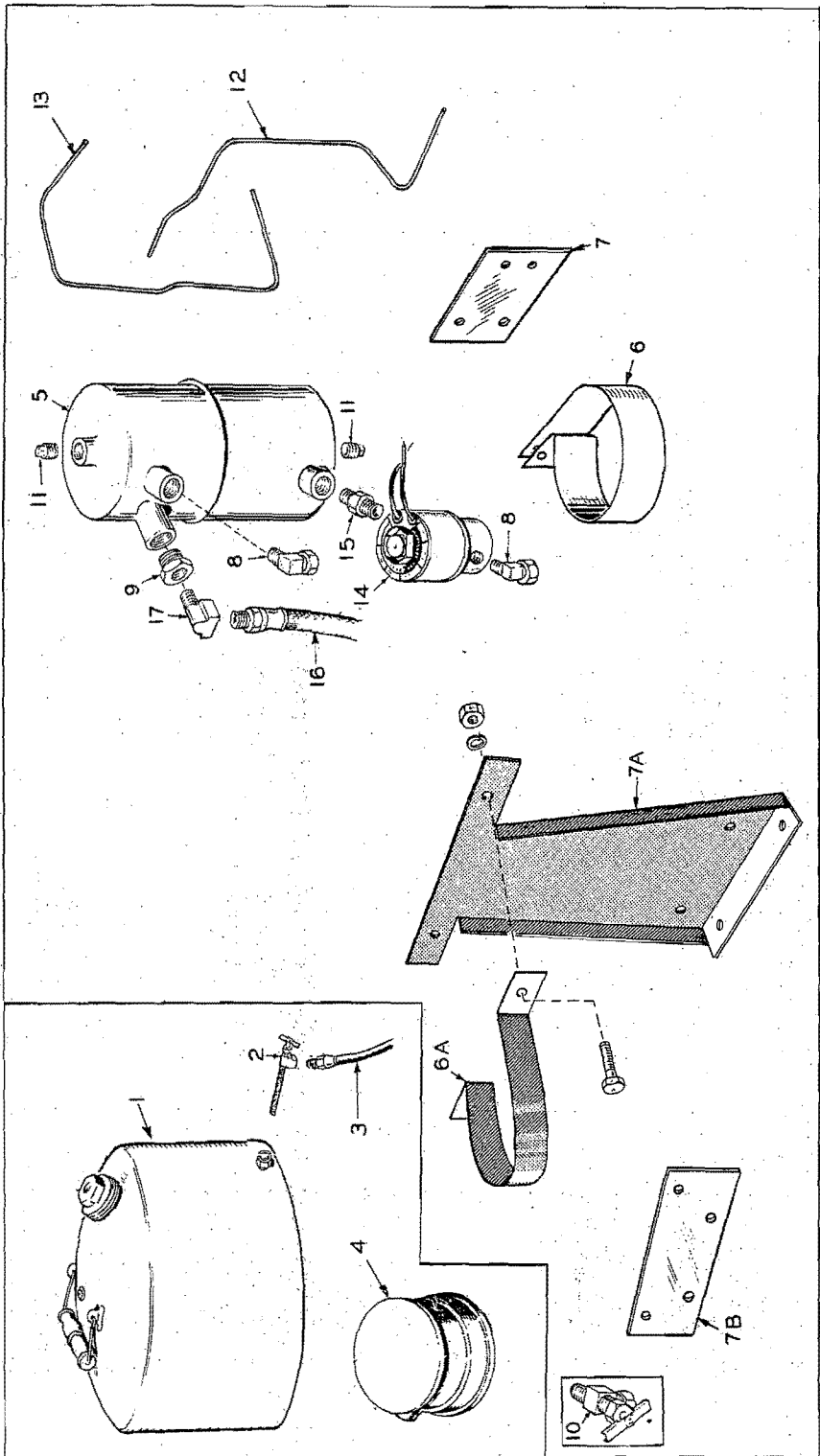
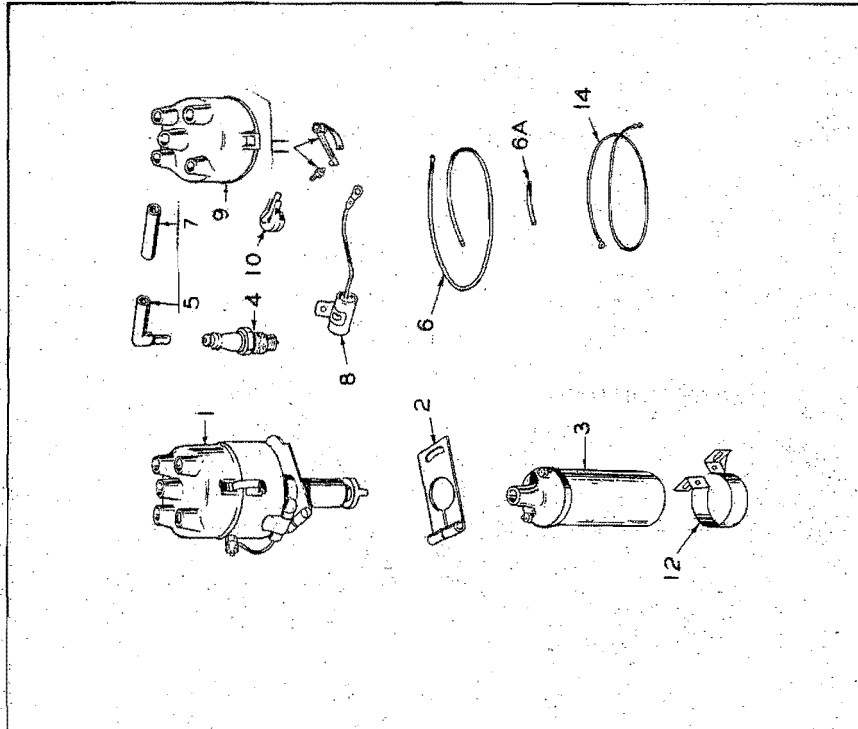
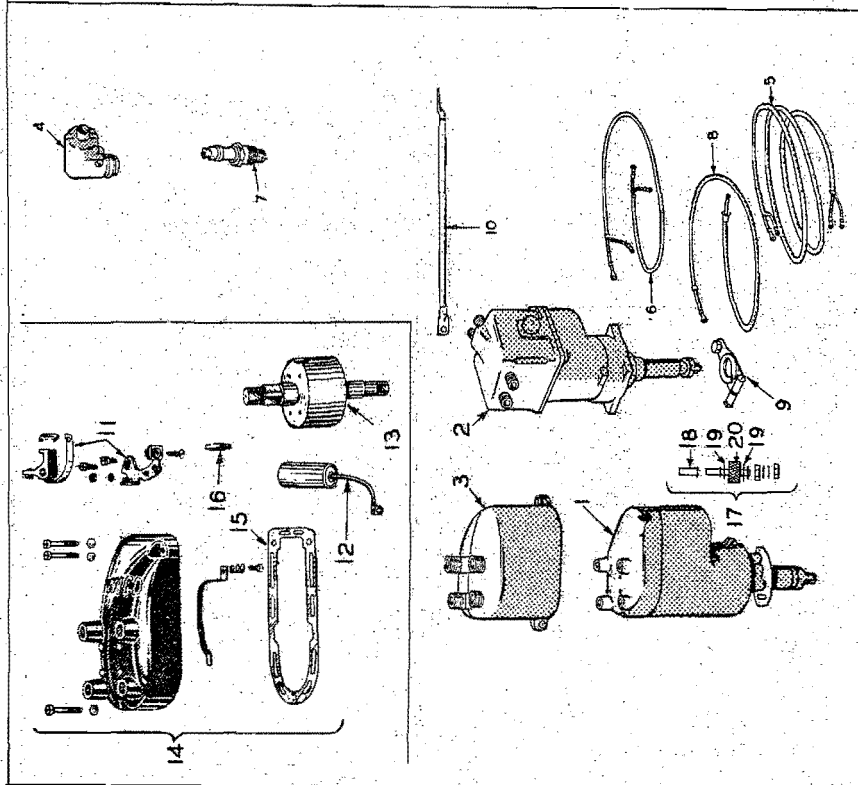
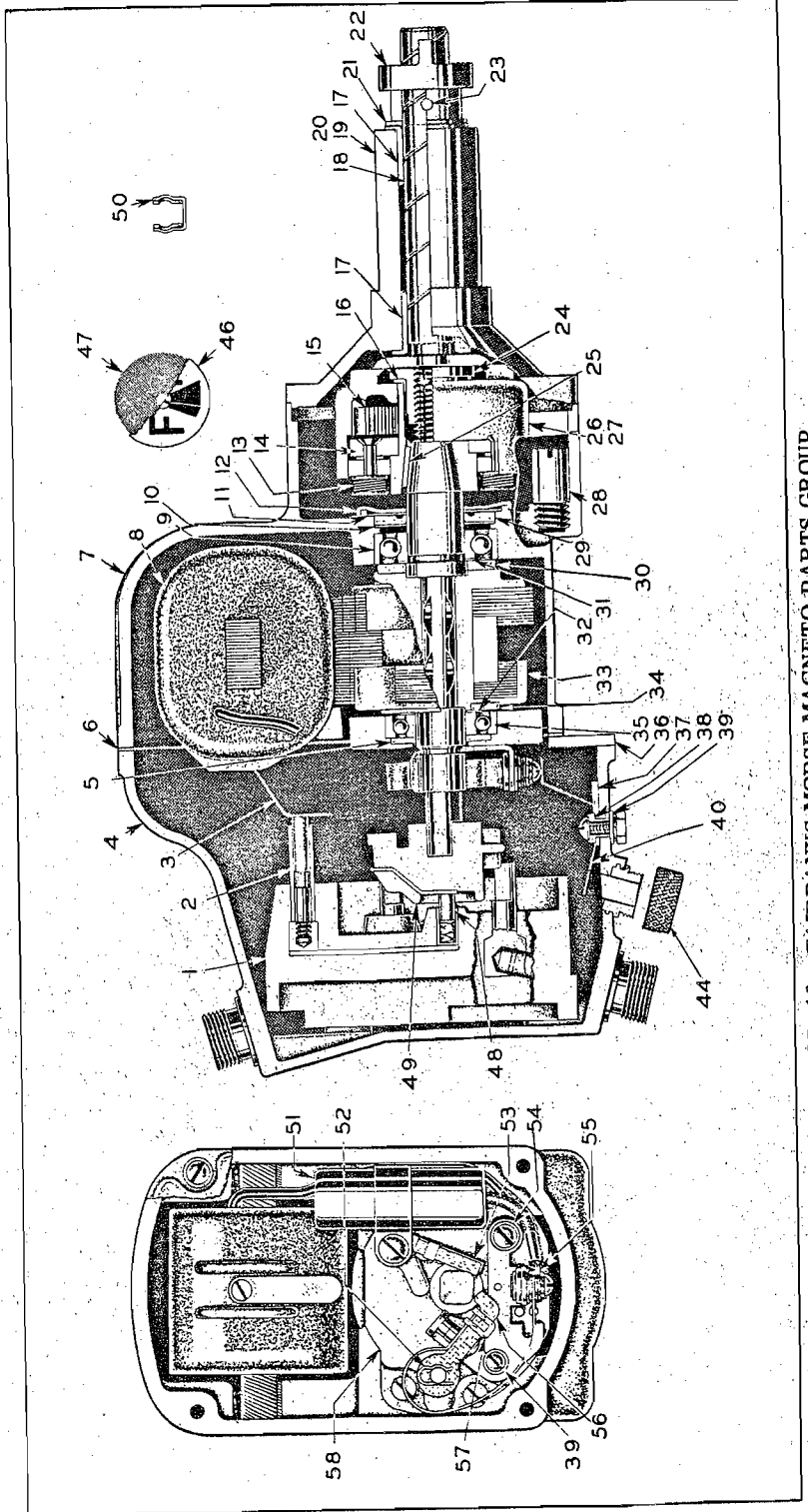


FIG. 13 - SEPARATE FUEL TANK AND DAY TANK GROUP - OPTIONAL EQUIPMENT





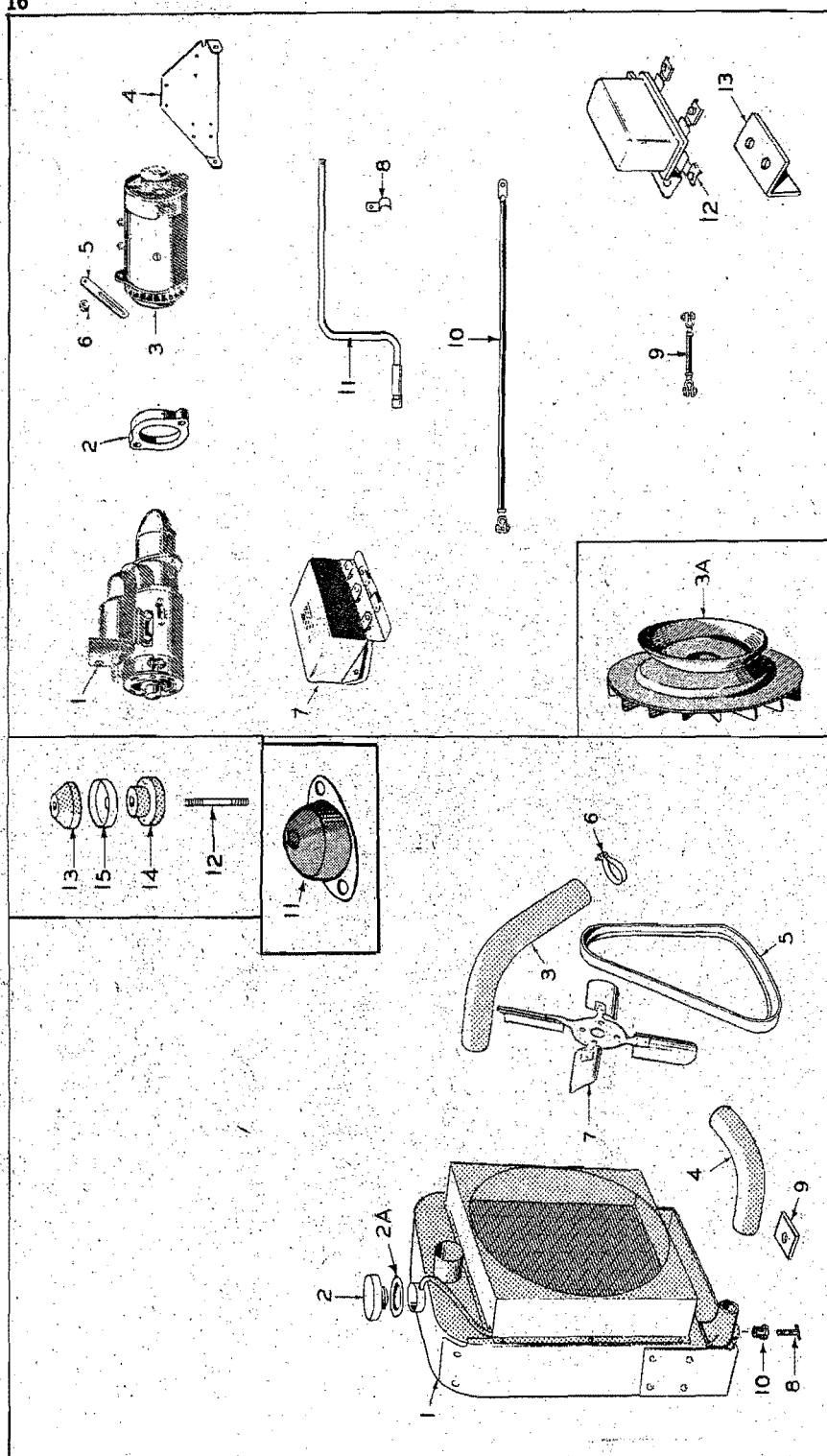


FIG. 17 - COOLING SYSTEM AND MOUNTING CUSHION GROUP

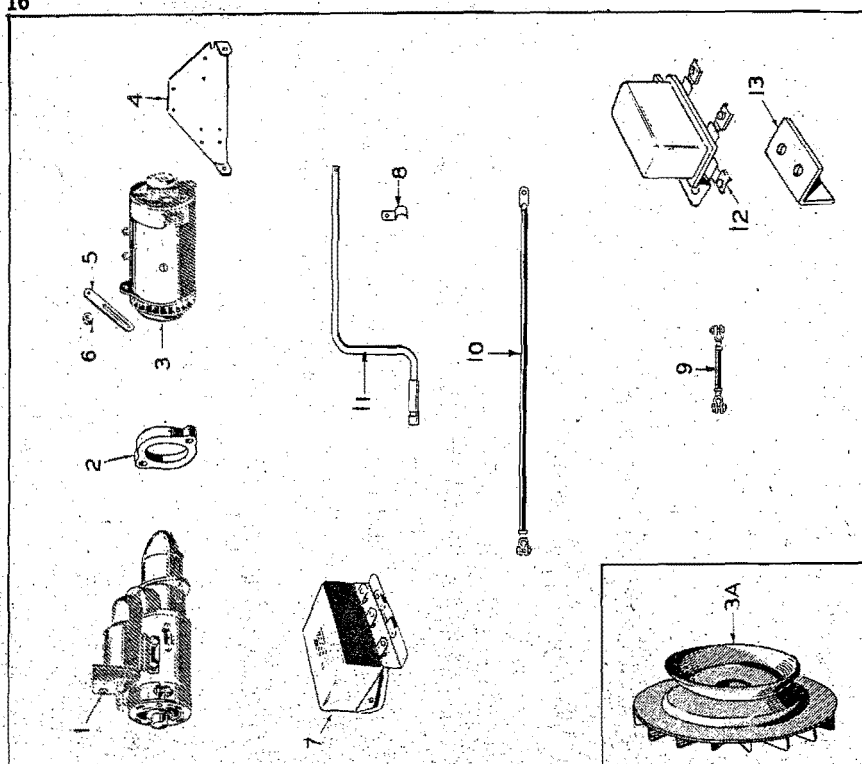


FIG. 18 - STARTING MOTOR
AND BATTERY CHARGE GENERATOR GROUP

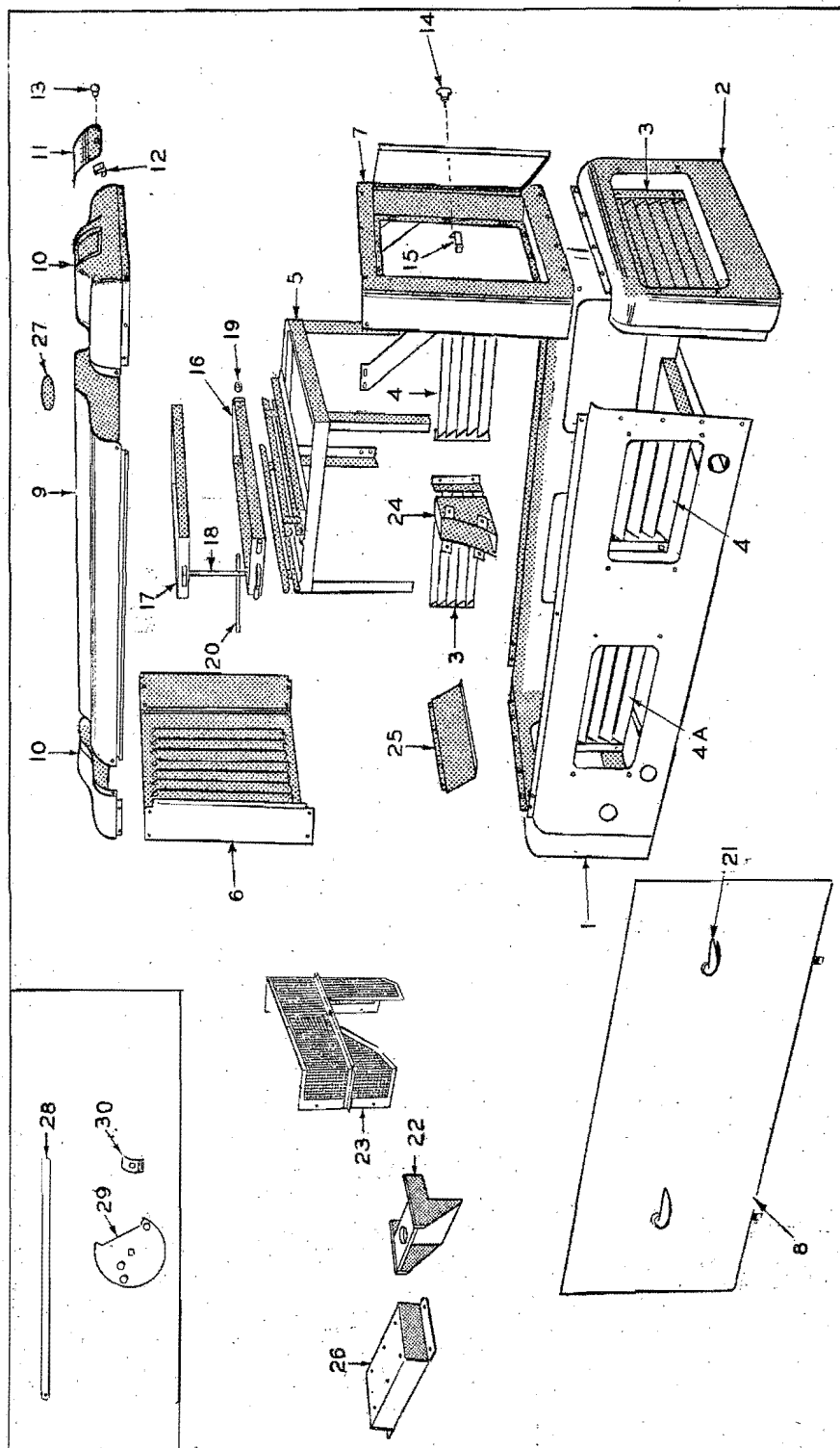


FIG. 19 - HOUSING GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F)

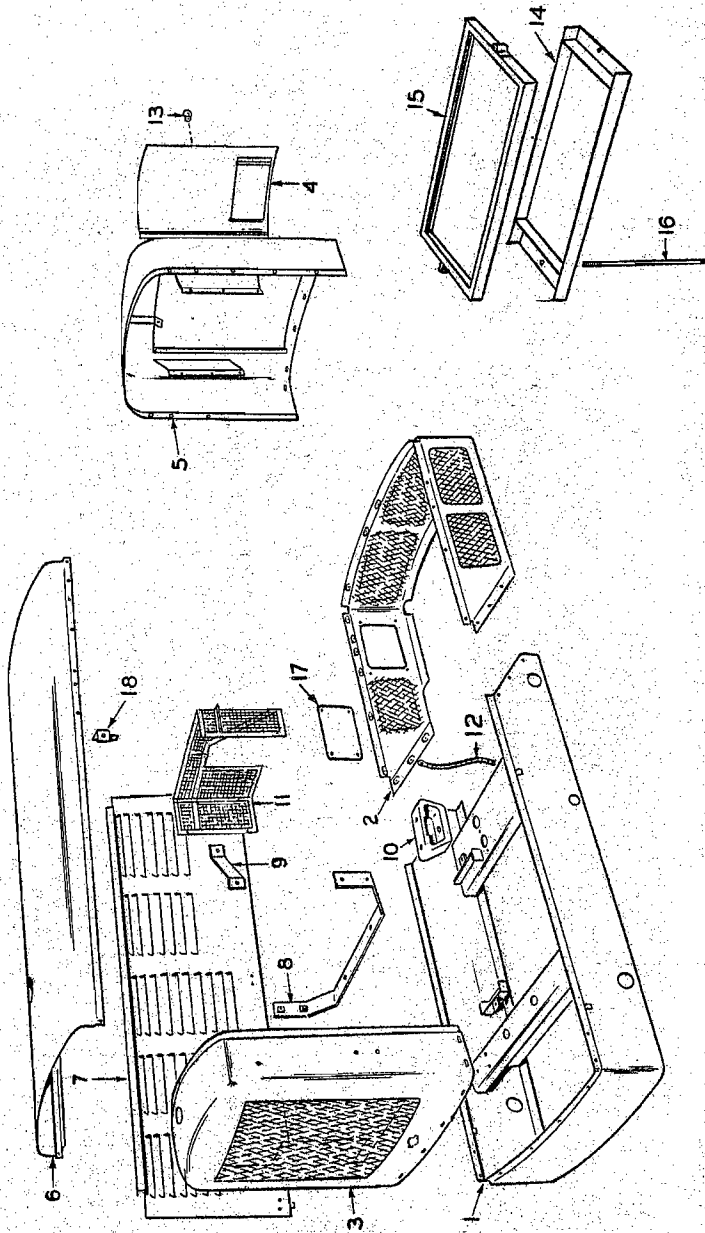


FIG. 19A - HOUSING GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F)

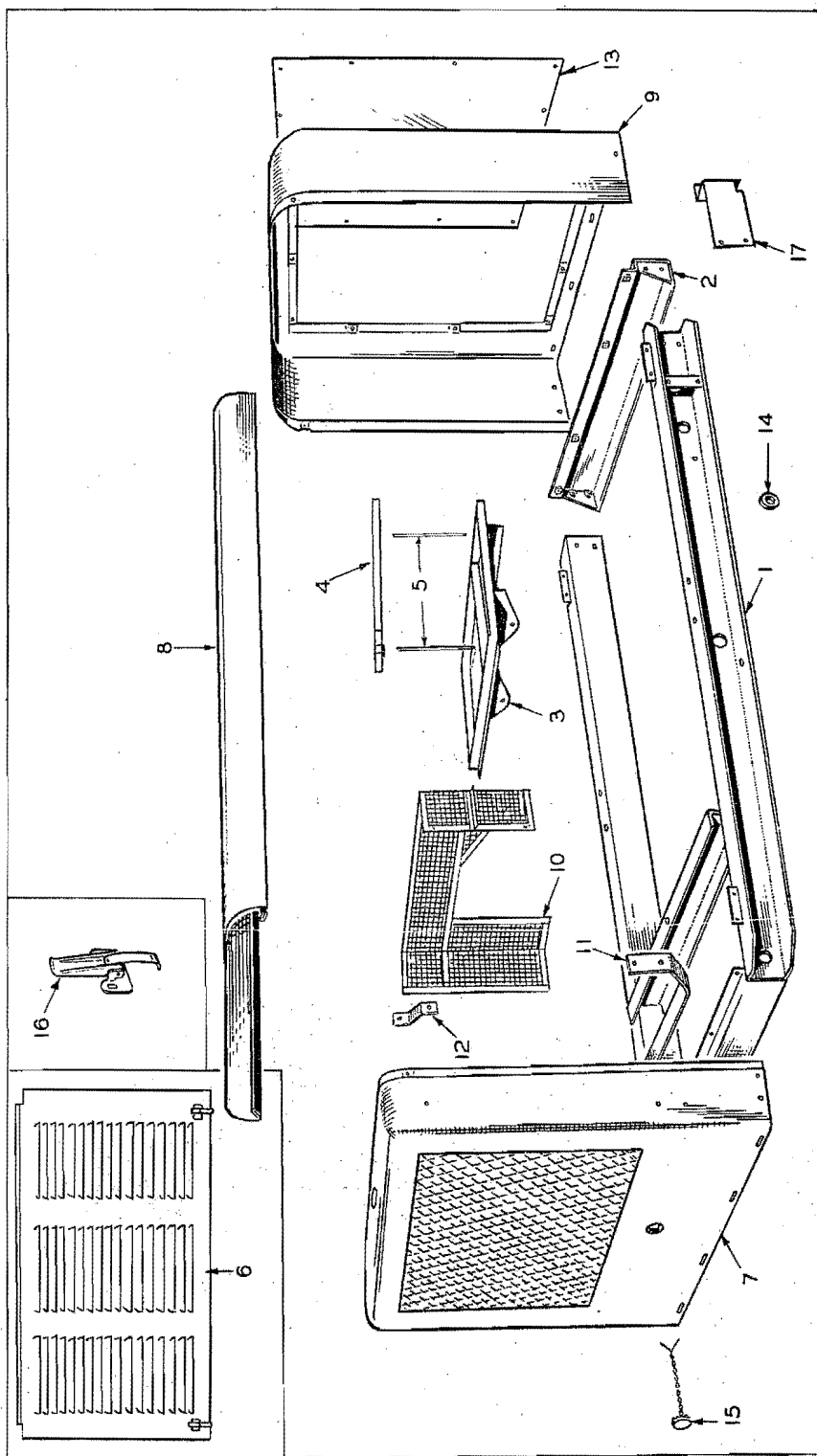


FIG. 19B - HOUSING GROUP - DC MAGNET USE PLANTS (PARTS KEY NO. 6)

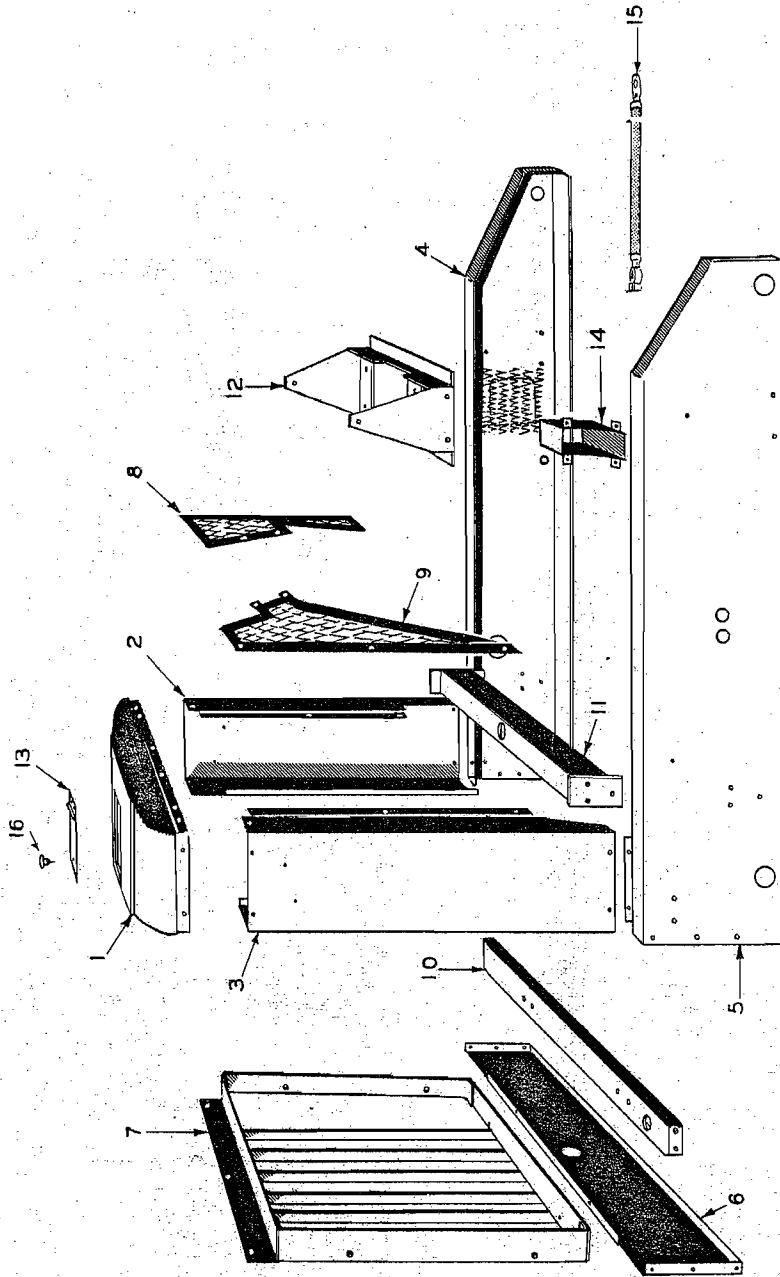


FIG. 20 - MOUNTING GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F)

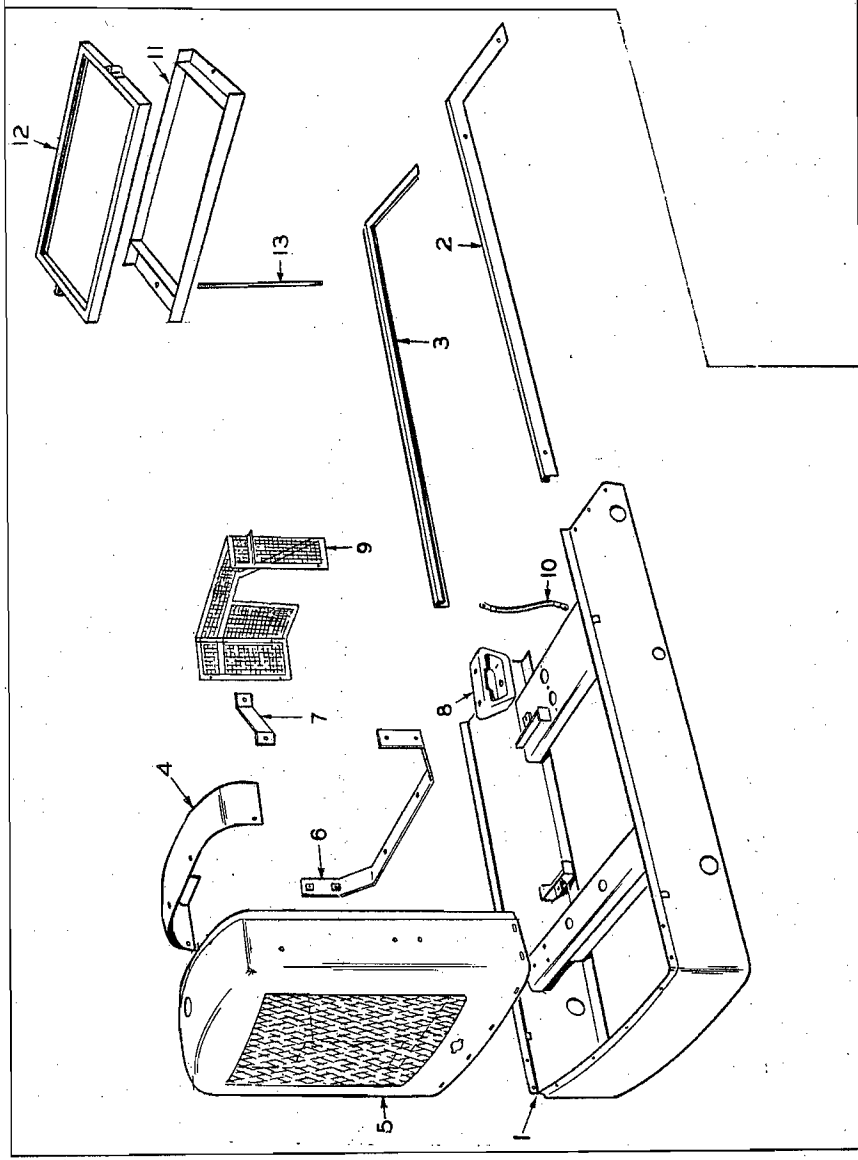


FIG. 20A - MOUNTING GROUP - UNHOUSED AC PLANTS
(PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F)

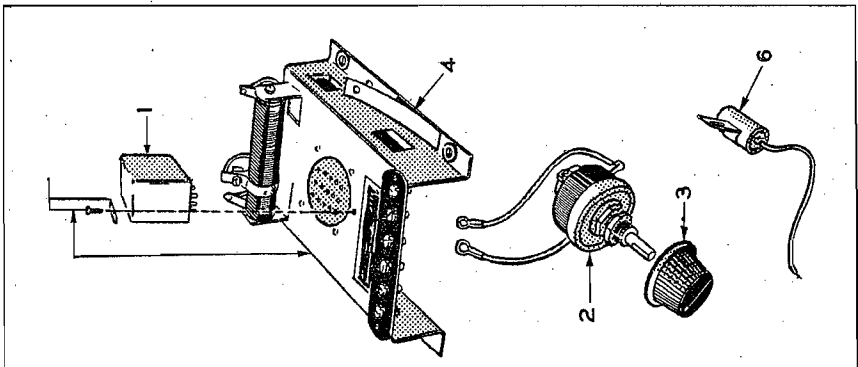


FIG. 21 - VOLTAGE REGULATOR GROUP -
(12 VOLT CRANKED PLANTS)-(PARTS KEY NOS. 1 THROUGH 5)

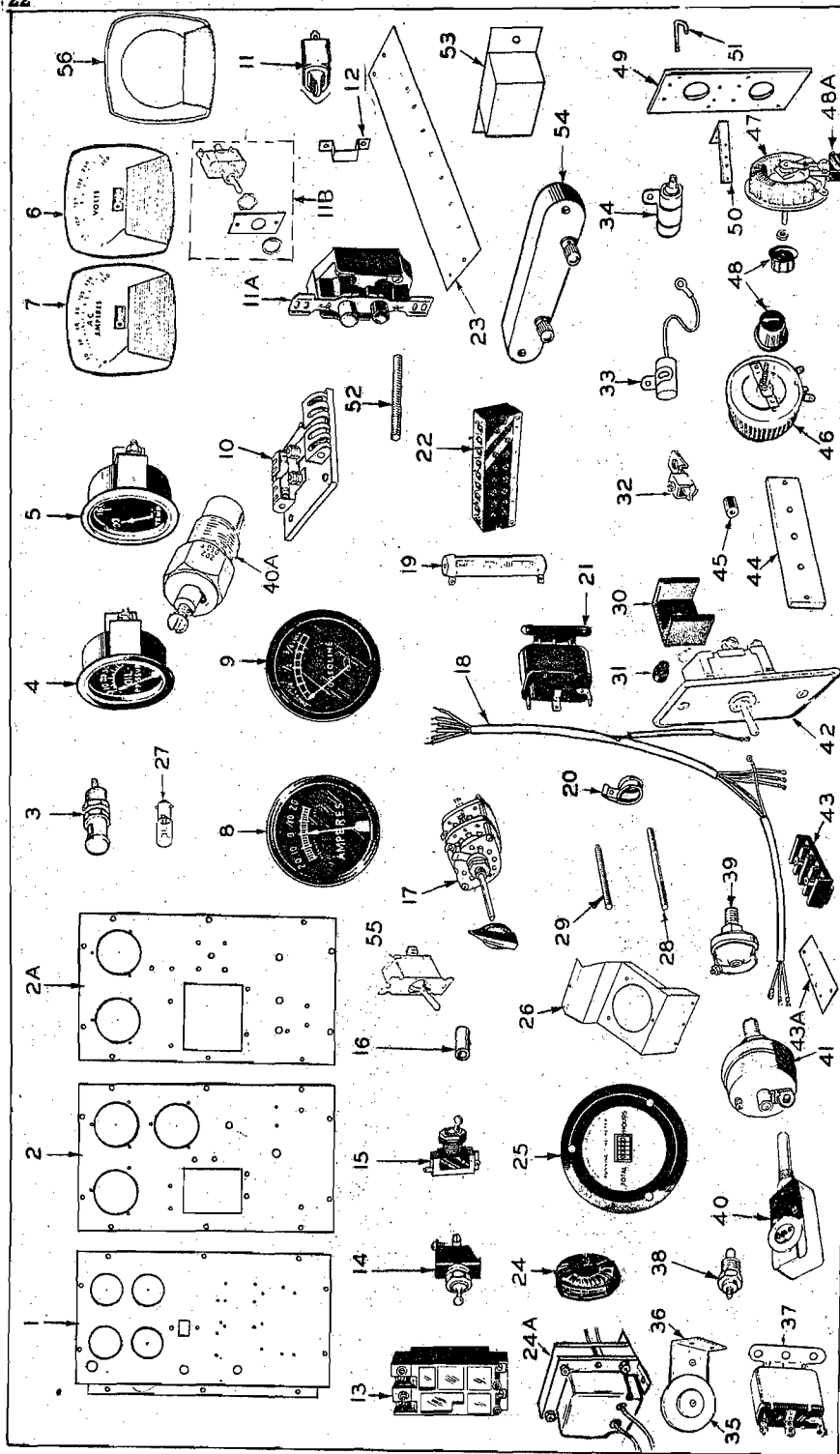


FIG. 22 - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F)

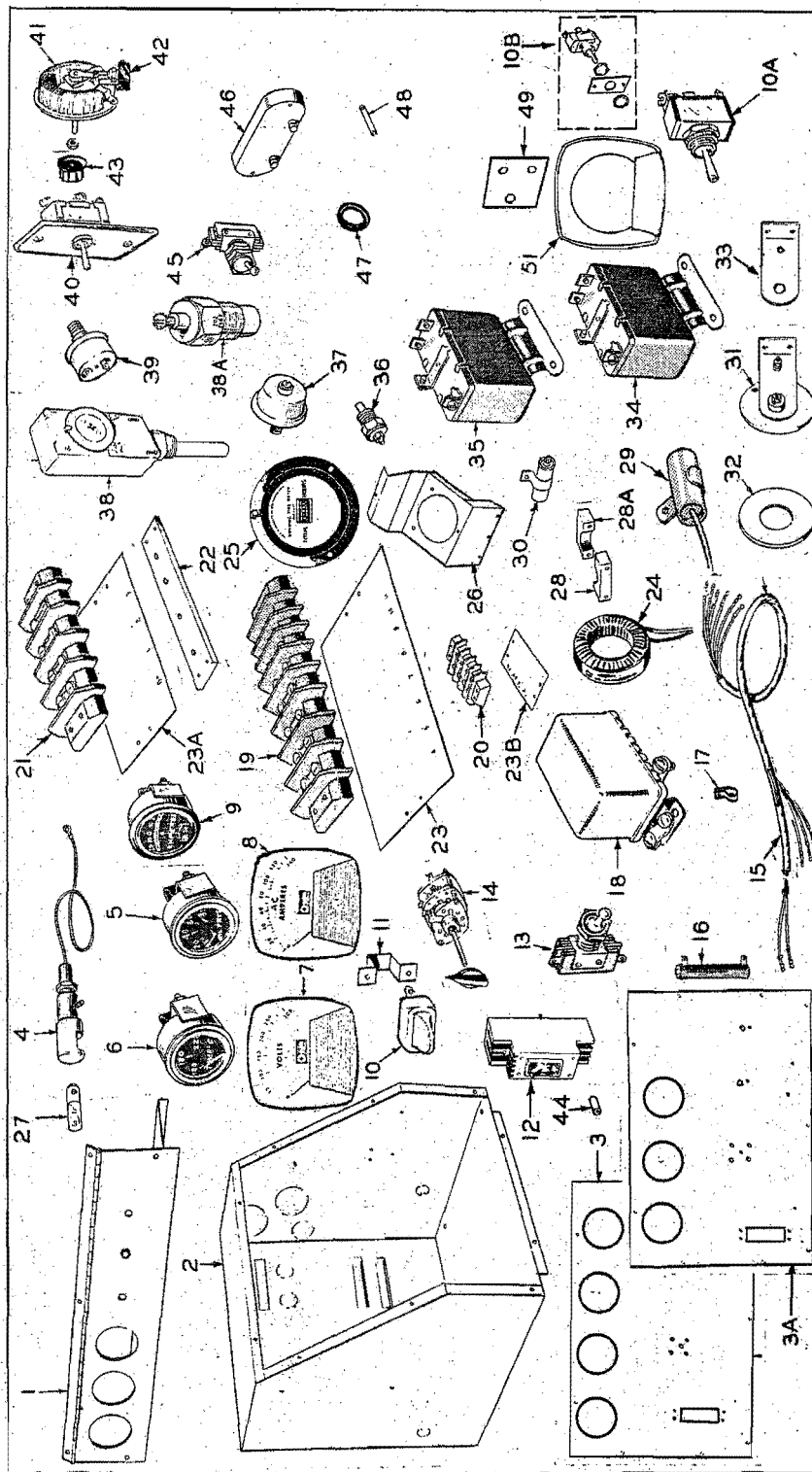


FIG. 22A - CONTROL GROUP - HOUSED PLANT'S (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F)

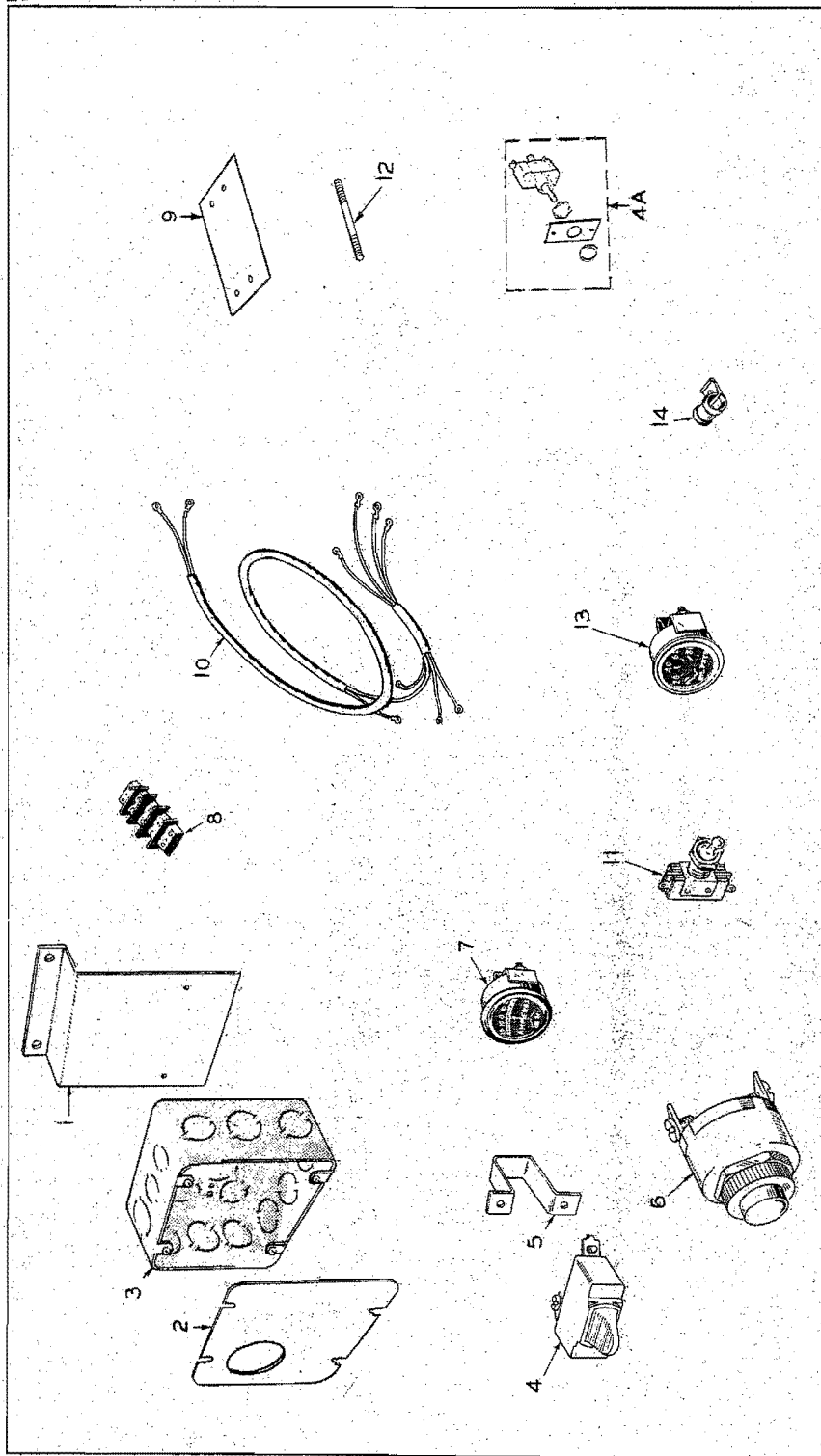


FIG. 22B - CONTROL GROUP - DC MAGNET PLANT - PARTS KEY NO. 6

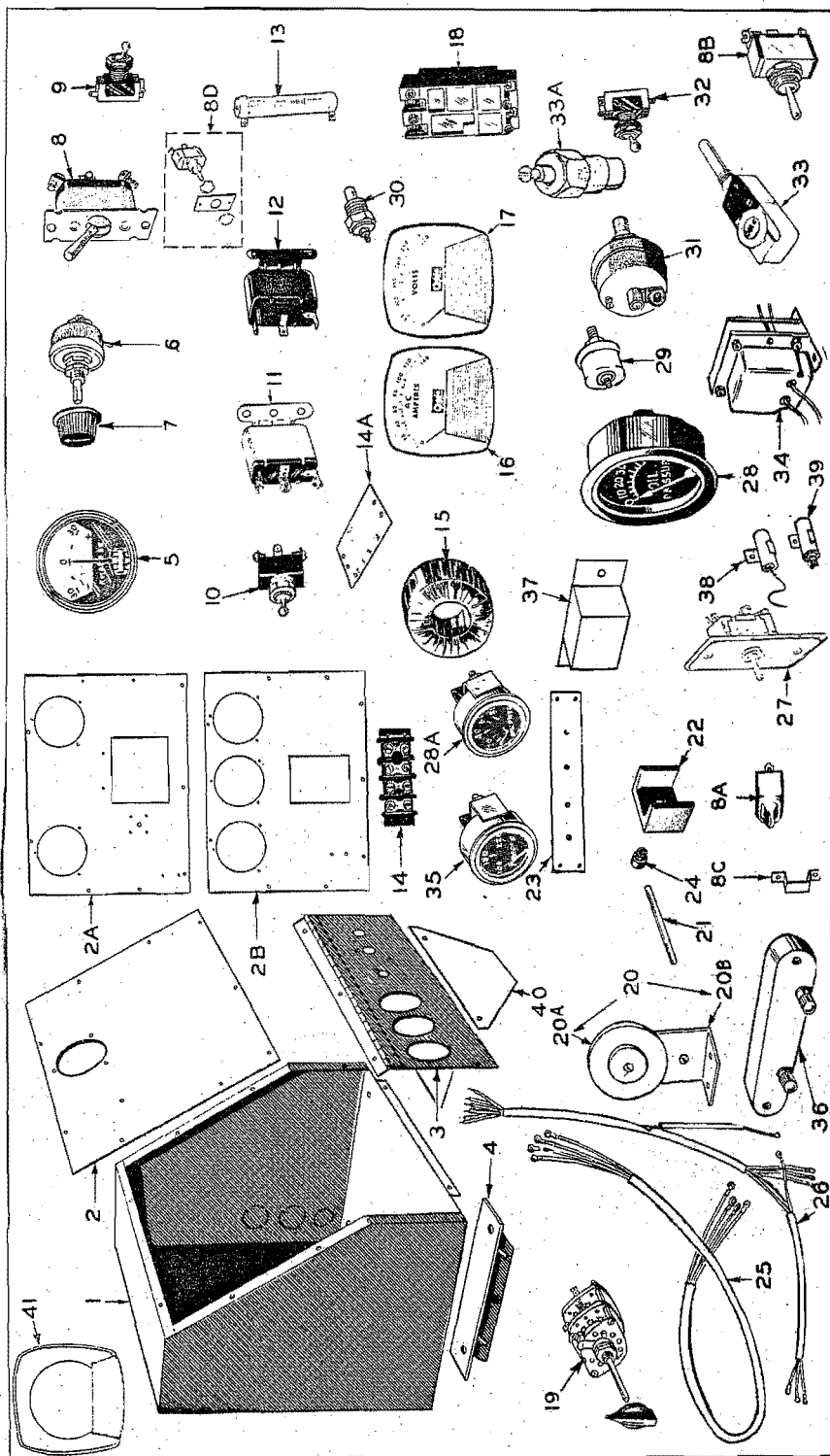


FIG. 23 - CONTROL GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5)

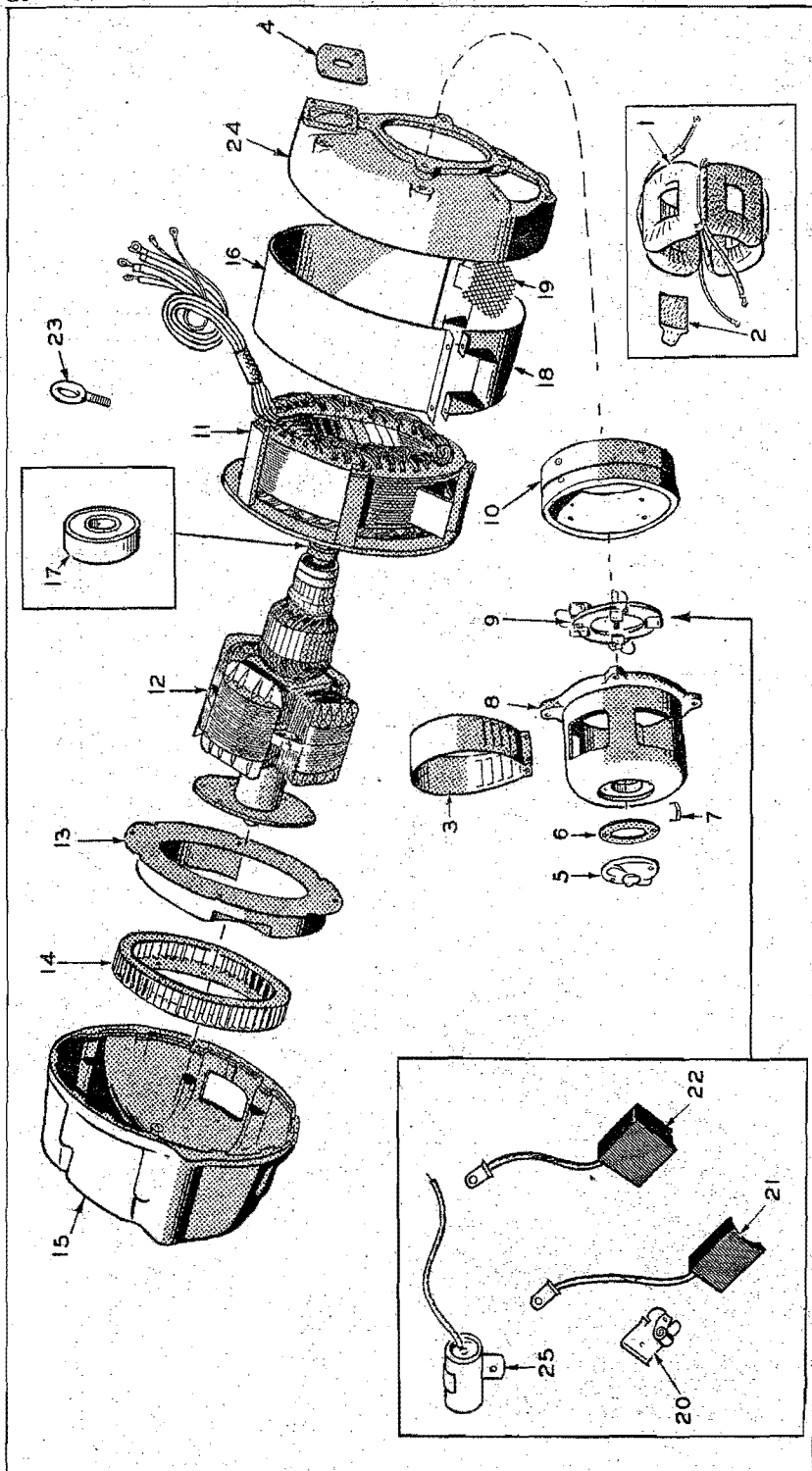


FIG. 24 - GENERATOR GROUP - NOT REMOVABLE TYPE EXCITER ARMATURE -
(FOR PARTS KEYS 1 through 5, PRIOR TO SPEC C)

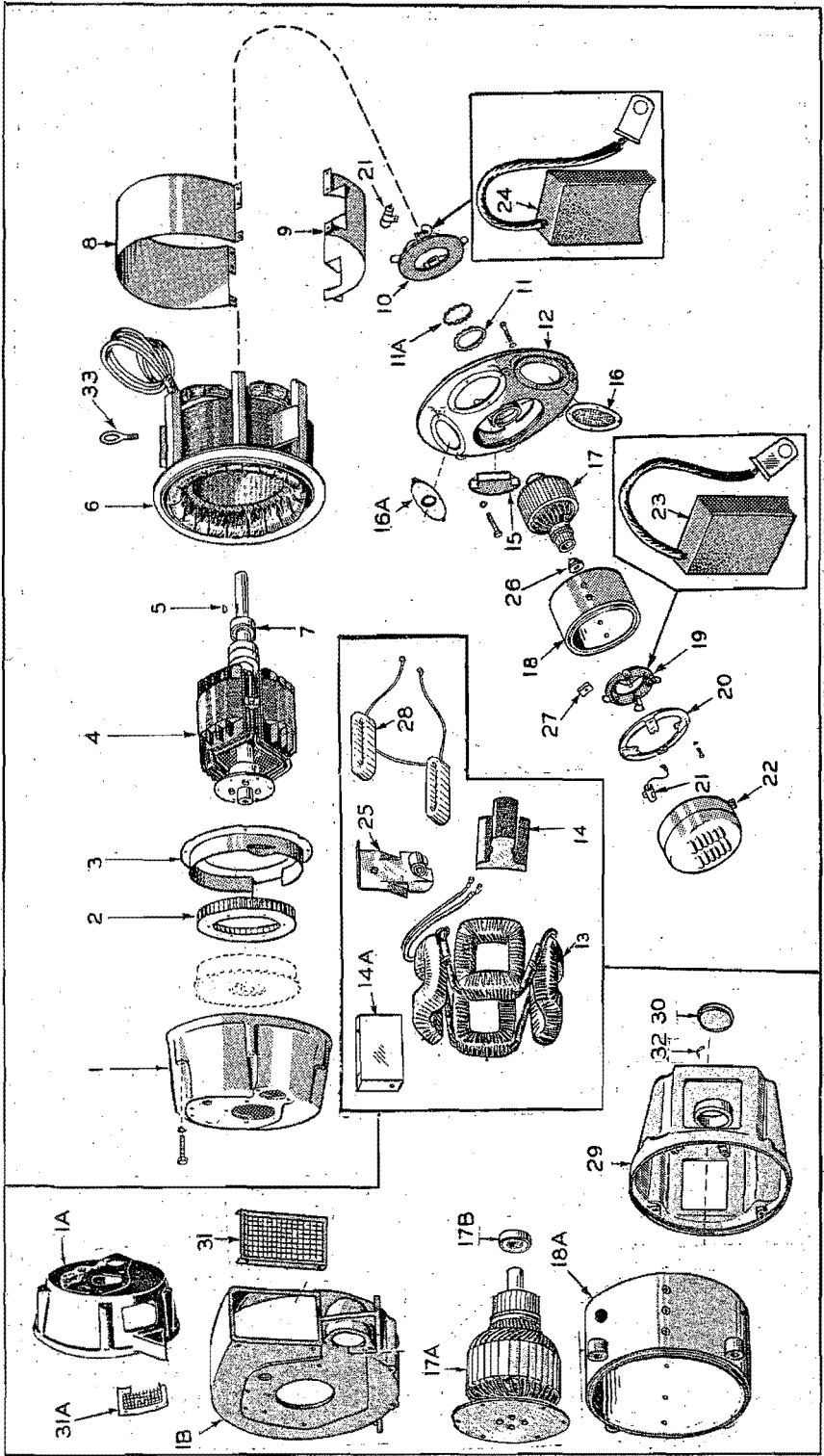


FIG. 25 - GENERATOR GROUP - REMOVABLE TYPE EXCITER ARMATURE -
(FOR PARTS KEY NOS. 1 through 5 BEGIN SPEC C, and FOR PARTS KEY NO. 6 in ALL SPECS)

ENGINE

OVERSIZE AND UNDERSIZE PARTS

If an oversize or undersize part is required, specify the size after the part number and separated with a dash. Example: F162A-230-.003(Oversize)

Sizes other than standard are offered as follows:

NOTE: Only standard size and those sizes below which are marked with an asterisk (*) are stocked by ONAN. Whenever practicable order other sizes directly from your nearest Continental Motors Corp. dealer.

OVERSIZE PISTONS

Cast Iron

.010 *
.020 *
.030 *
.040
.050
.060

S.F. (Semi-Finished)

Aluminum

.010
.020
.030
.040

S.F.

OVERSIZE PISTON RINGS

.010 *
.020 *
.030 *
.040
.060

OVERSIZE PISTON PINS

.003 *
.005
.010

UNDERSIZE BEARINGS (MAIN & ROD)

.002 *
.010
.020 *
.030
.040
.060 (may be reworked
to .040)

OVERSIZE GEARS

Identification Mark on Gear

.001	①
.002	②
.003	③
.004	④
.005	⑤
.006	⑥

UNDERSIZE GEARS

Identification Mark on Gear

.001	①
.002	②
.003	③
.004	④
.005	⑤
.006	⑥

REF. PART
NO. NO.

QUANT.
USED

DESCRIPTION

FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW

		Engine, Replacement - General Description:
		Includes - Complete Block, Valve Cover, Cylinder Head, Oil Pan, Thermostat, Water Pump, Fan Hub, Flywheel, Manifold.
		Excludes - Radiator, Air Cleaner, Fan Blades, Flywheel Housing, Fuel Pump, Governor, Ignition Wiring, Magneto, Distributor, Spark Plugs, Charge Generator and Regulator, Carburetor, Fan Belt, Oil Filter, Oil Fill Neck, Starting Motor.
		Plants Prior to Spec "F" -
		Parts Key Nos. 1 through 5 (Continental Type F-162 Spec 966).
		Parts Key No. 6 (Continental Type F-162 Spec 966 with Manifold Assembly #F162E-502).
		Plants Begin with Spec "F" (Continental Type F-162 Spec 1377).
		Shaft Assembly, Magneto Drive - (CO)F600M-2160.
		Coupling, Drive - Magneto Drive Shaft.
		Pin, Magneto Drive Coupling.
		Adapter, Magneto.
		Elbow, Outlet - Cylinder Water.
		Plug, Pipe - Cylinder Water Outlet Elbow - 1/2".
		3/8".
		Gasket, Cylinder Water Outlet Elbow - (CO)C400K-215.
		Cover, Timing Hole (CO)F400C-206.
		Felt, Timing Hole Cover.
		Gasket, Fuel Pump Mounting.
		Felt, Rear Bearing Oil Guard - 1/2" thick (to be secured with shellac or equal) - (CO)F400B-251.
		Head Assembly, Cylinder - Includes Studs and Plug - Standard Compression - (CO)F140A-310.
		High Compression (For use with gaseous fuel only).
		Thermostat, Coolant Water - (CO)F226K-318.
		Plug, Pipe - 1/2" - Countersunk.
		Gasket, Exhaust and Intake Manifold to Cylinder - (CO)F400E-303.
		Plug, Pipe - 1/8" Sq. Head - Exhaust Manifold (CO)X-100.
		Ring, Thermostat Adapter - (CO)F218K-202.
		Cock, Drain - Cylinder Water - Replaces (CO)X-1005.
1	100P124	
2	100A165	
3	100P235	
4	185-807	
5	(CO)PYM-201	
6	(CO)X-1735	
7	(CO)F162M-271	
8	(CO)F226K-337	
9	(CO)X-101-B	
10	(CO)X-110	
11	185-749	
12	232-255	
13	(CO)F400C-208	
14	149A126	
15	185-582	
16	185-506	
17	110A813	
18	309-39	
19	(CO)X-101-B	
20	185-638	
21	505-57	
22	185-750	
23	(CO)X-1015	

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW (Cont.)			
19	185-518	1	Gasket, Cylinder Head - (CO)F400A-336.
20	(CO)D600L-3000	1	Rod Assembly, Oil Gauge.
21	509-29	1	Felt, Oil Gauge Rod Cover - (CO)K404L-210.
22	(CO)Y400L-266	1	Support, Oil Gauge Rod - Cylinder and Crankcase Assembly - Includes Cylinder and Crankcase, Bearings, Bushings, Guides, Inserts, Support, Guard, Screws, Studs, Plugs and Pins - Prior to Spec "F".
	(CO)F400A-42119-A	1	Begin with Spec "F".
	(CO)F400A-42170-A	1	Cylinder and Crankcase Assembly - Includes Ref. 23 plus Pistons and Rings.
23A	(CO)F400A-42119-C	1	Prior to Spec "F".
	(CO)F400A-42170-C	1	Begin with Spec "F".
23B			Cylinder and Crankcase Assembly - Includes Ref. 23A plus Valves, Springs, Locks, Retainers, and Tappet Assembly - Prior to Spec "F".
	(CO)F400A-42119-I	1	Begin with Spec "F".
	(CO)F400A-42170-I	1	Cylinder and Crankcase Assembly - Includes Ref. 23B plus Connecting Rods, Crankshaft, Camshaft, Front End Plate, Gears, Filler Blocks, Cylinder Head, Gaskets, Gear Cover Assy., Oil Pump Assembly, Oil Pan Assembly, Studs, Nuts, Screws, Washers, Plug and Lock Wires - Begin with Spec "F" Only.
23C	(CO)F400A-42170-S	1	Dowel, Ring - Gear Cover to Crankcase.
	(CO)J8TC-200	1	Gasket, End Plate to Cylinder - (CO)F400B-225.
24	185-581	1	Plate, Crankcase End.
25	(CO)F400B-322	1	Tube, Vent - Valve Chamber Cover.
26	(CO)P39A-221	1	Gasket, Gear Cover to End Plate - Replaces (CO)F400B-320.
27	(CO)F400B-383	1	Elbow, Vent Tube - Valve Chamber Cover.
28	(CO)X-12150	1	Cover Assembly, Valve Chamber.
29	(CO)F400A-2410	1	Screw, Dowel - Gear Cover to End Plate - Replaces D600B-221.
30	(CO)X-5823	1	Cover Assembly, Gear - Includes Seal.
31	(CO)F400B-4142	1	Seal, Oil - Crankshaft Bearing - Front - (CO)X-1555 - Replaces (CO)A600L-202.
32	185-842	1	Gasket, Valve Chamber Cover - (CO)F124A-201.
33	185-504	1	Dowel, Ring - End Plate to Crankcase.
34	(CO)D600B-203	1	Gasket, Oil Pan.
35	(CO)F400B-442	2	

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW (Cont.)			
37	185-577	1	Block, Front Filler - (CO)D600B-340.
38	185-584	2	Cork, Front or Rear Filler Block to Crankcase - (CO)F400B-255 - Replaces (CO)D600B-214.
39	(CO)F400B-4580	1	Pan, Oil.
40	185-578	1	Block, Rear Filler - (CO)D600B-406.
41	185-583	2	Seal, Oil - Rear Bearing Filler Block (Felt against neoprene - Install with felt towards rear) - (CO)F400B-252.
42	185-574	1	Guard, Oil - Crankshaft Rear Bearing - (CO)D600B-305.
43	(CO)15SL-211	1	Valve, Relief - Oil Pressure.
44	(CO)X-14324	As Req.	Washer, Adjusting - Oil Pressure Relief Valve - Replaces (CO)W5L-213.
45	(CO)F400L-223	1	Spring, Oil Pressure Relief Valve - Replaces (CO)F400L-219.
46	185-838	1	Gasket, Oil Pressure Relief Valve Plug - (CO)X-365.
47	(CO)41AL-200	1	Plug, Oil Pressure Relief Valve.
48	185-837	2	Gasket, Valve Chamber Cover Nut - (CO)X-334.
49			Stud -
	(CO)X-19897	1	Manifold to Cylinder (3/8-16 x 5-1/2") Prior to Spec "F" on Plants with Down Exhaust Manifold.
	(CO)X-4256	1	Intake and Exhaust Manifold to Cylinder (3/8-16 x 3-5/8") Use on Plants with Up Exhaust Manifold.
50			Manifold Assembly, Intake and Exhaust - Prior to Spec "F" -
	(CO)F400E-3041	1	For Parts Key Nos. 1 through 5 (Down Exhaust).
	185-635	1	For Parts Key No. 6 (Up Exhaust) - (CO)F162E-502.
	185-635	1	Begin with Spec "F" (Up Exhaust) - (CO)F162E-502.
51	(CO)F162F-416	1	★ Manifold, Intake.
52	(CO)F400E-304	1	★ Manifold, Exhaust.
53	(CO)X-19019	3	★ Stud, Exhaust to Intake Manifold (3/8-16 x 3-15/16").
54	854-20	3	★ Washer, Lock - Exhaust to Intake Manifold (CO)X-297.
55	(CO)X-18278	3	★ Nut, Exhaust to Intake Manifold (3/8-16).
56	(CO)F400E-205	1	★ Gasket, Exhaust to Intake Manifold.

★ - These parts used only on plants with Parts Key Nos. 1 through 5 Prior to Spec F (Down Exhaust).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW (Cont.)

57		1	★Control Assembly, Heat - Not Sold as an Assembly - Includes indented components not individually illustrated.
	(CO)C400E-218	1	★Thermostat, Heat Control - Bi-Metal.
	(CO)C400E-212	1	★Key, Heater Valve.
	(CO)C400E-219	1	★Washer, Heat Control Thermostat Shield.
	(CO)C400E-216	1	★Counterweight, Heat Control Valve.
	(CO)X-3009	1	★Screw, Heat Control Counterweight Clamp (10-32 x 3/4").
	(CO)X-1896	1	★Nut, Heat Control Counterweight Clamp Screw (#10-32).
	(CO)F600E-208	1	★Valve, Exhaust Manifold Heater (Requires welding to assemble).
	(CO)F400E-206	1	★Shaft, Exhaust Manifold Heater Valve (Requires welding to assemble).
	(CO)F600G-200	1	★Bushing, Heater Control Valve (Requires welding to assemble).
	(CO)F400E-210	1	★Screw, Stop - Heater Control Valve.
	(CO)C400E-217	1	★Cover, Exhaust Manifold Thermostat.
	(CO)F400E-207	1	★Spacer, Exhaust Manifold Thermostat Cover.
	(CO)X-17019	1	★Pin, Heat Control Cover Stop (3/16 x 3/8").
	(CO)X-3055	1	★Screw, Heat Control Cover to Manifold (1/4-20 x 1").
	(CO)X-201	1	★Washer, Lock - Heat Control Cover Screw.
58	(CO)C600E-202	1	★Gasket, Exhaust Pipe Packing.
59	(CO)C600E-200	1	★Flange, Packing - Exhaust Pipe.
60	(CO)X-4266	2	★Stud, Exhaust Outlet Packing Flange (3/8-16 x 2-1/8").
61	(CO)X-1954-B	2	Stud, Fuel Pump Mounting (5/16-18 x 1-1/2") - Replaces (CO)X-1952.
62	(CO)X-4723	14	Stud, Cylinder Head to Cylinder - 3-1/2" Long - Replaces (CO)X-19828.
63	(CO)3X-X-1408	15	Washer, Plain (14) Cylinder Head Stud, (1) Distributor Adapter Stud.
64	(CO)3X-X-1803-E	15	Nut, Cylinder Head (7/16-20).
65			Stud -
	(CO)X-19837	2	Water Outlet Elbow (5/16-18 x 2-1/8").
	(CO)X-19004-C	1	Magneto Adapter to Cylinder Head (3/8-16 x 1-1/2").
	185-849	8	(2) Gear Cover to Cylinder - Upper Holes, (6) Intake and Exhaust Manifold to Cylinder (3/8-16 x 1-11/16") - (CO)X-4200
	(CO)X-4036	2	Valve Chamber Cover (1/4-20 x 1-3/8"

★ - These parts used only on plants with Parts Key Nos. 1 through 5 Prior to Spec F (Down Exhaust).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW (Cont.)			
66			Screw -
	(COX)-3941	2	Front End Plate to Gear Cover (3/8-16 x 7/8").
	(COX)-3295	3	(1) Gear Cover to Cylinder, (1) Gear Cover to Filler Block, (1) Gear Cover to End Plate (3/8-16 x 1-1/8").
	(COX)-3368	1	Gear Cover to Crankcase (at ring dowel) 7/16-14 x 1-1/2".
	(COX)-3299	3	Gear Cover to Filler Block (3/8-16 x 2").
	(COX)-2958	2	Rear Filler Block to Crankcase (5/16-18 x 2-5/8").
	800-27	2	Front Filler Block to Crankcase (COX)-3924 (5/16-18 x 7/8").
67	(COX)-3896	15	Screw and Washer - (1) Front End Plate to Cylinder, (14) Oil Pan (5/16-18 x 3/4").
68			Washer -
	(COX)-14134	2	Gear Cover to Filler Block (Upper) Copper (3/8").
	526-26	3	Manifold to Cylinder - Plain - 3/8" (CO)UB-110.
	(COX)-14141	4	Manifold to Cylinder (13/32").
69			Washer, Lock -
	(COX)-226	8	(1) Magneto Adapter to Head, (2) Front End Plate to Gear Cover, (3) Gear Cover to Cylinder, (2) Gear Cover to Filler Block - 3/8" - Replaces (COX)-203.
	850-45	4	(2) Outlet Elbow, (2) Fuel Pump Mounting - 5/16" (COX)-202.
	(COX)-14220	7	(1) Gear Cover to End Plate, (2) Gear Cover to Crankcase, (4) Front and Rear Filler Block to Crankcase - 3/8" - Replaces (COX)-270.
70			Nut -
	(COX)-1802-G	4	(1) Magneto Adapter to Head, (2) Gear Cover to Cylinder, (1) Gear Cover to End Plate (3/8-16).
	(COX)-1803-H	1	Gear Cover to End Plate (7/16-14).
	(COX)-18327	1	Valve Chamber Cover.
	870-48	4	(2) Outlet Elbow, (2) Fuel Pump Mounting - 5/16-18 (COX)-1801-E.
	185-855	7	Manifold to Cylinder (3/8-16) - (COX)-18278.
71	(COX)-4731	1	Stud, Distributor Adapter - 4" Long - Replaces (COX)-4349.
	(COX)-2963	2	Screw, Dowel - Flywheel Housing to Crankcase (7/16-14 x 1-1/2") - Replaces (COX)-2693.
			Plug, Hubbard -
	517-28	1	Camshaft Bushing (Rear) 1-1/2" (COX)-2236.
	(COX)-2207	1	Cylinder Core Hole - 1-1/8".
	(COX)-2202	2	Cylinder Core Hole - 1-3/8".

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 1 - ENGINE PARTS GROUP - EXTERNAL VIEW (Cont.)			
	(CO)X-5798	2	Screw and Washer, Filler Block to Flywheel Housing - Replaces (CO)X-3056.
	(CO)X-201	2	Washer, Lock - Filler Block to Flywheel Housing.
	(CO)X-3115	1	★Screw, Intake Manifold Plug.
	(CO)X-366	1	★Gasket, Intake Manifold Plug Screw.
	(CO)X-101	1	★Plug, Pipe - Intake Manifold (Ext. Head - 1/4").
	(CO)X-100	1	★Plug, Pipe - Intake Manifold (Ext. Head - 1/8") - Begin Spec "F".
	(CO)F162U-109	1	Gasket Kit, Valve Grinding

★ - These parts used only on plants with Parts Key Nos. 1 through 5 prior to Spec F (Down Exhaust).

FIG. 2 - ENGINE PARTS GROUP - INTERNAL VIEW

1	(CO)F400C-500	1	Crankshaft - Replaces (CO)F400C-357 and F400C-5000.
2	(CO)D600G-204	2	Washer, Thrust - Crankshaft.
3	185-698	1	Pin, Crankshaft Thrust Washer to Crankcase - 5/32 x 1/2" - (CO)6TG-101.
4	185-623	As Req.	Shim, Thrust - Crankshaft (.002") - (CO)10EC-204.
5	185-624	As Req.	Shim, Thrust - Crankshaft (.008") - (CO)10EC-205.
6	(CO)F600C-205	1	Plate, Thrust - Crankshaft.
7	(CO)D600H-300	1	*Gear, Timing - Crankshaft.
8	(CO)X-534	2	Key, Crankshaft Gear - Rear - Replaces (CO)X-511.
9	(CO)A600C-204	1	Thrower, Oil - Crankshaft.
10	185-842	1	Seal, Fan Drive Pulley - (CO)X-1555 - Replaces (CO)D600K-232.
11	(CO)F140K-302	1	Pulley, Fan Drive (On Crankshaft)
12	185-748	1	Plug, Keyway - Fan Drive Pulley - (CO)C400K-217.
13	(CO)8UO-202	1	Washer, Crankshaft Starting Jaw to Crankshaft - Replaces F600-O-205.
14	(CO)F600-O-206	1	Jaw, Starting - Replaces (CO)D600-O-201.
15	(CO)F400B-348.	1	Cap, Bearing - Front.
16	185-831	1	*Kit, Crankshaft Front Bearing - (CO)F600T-227- Upper & Lower - Includes Washer and Bearing (CO)F600G-3491.

* - Refer to, Available Oversize and Undersize Parts Chart.

REF. PART
NO. NO.QUANT.
USED

DESCRIPTION

FIG. 2 - ENGINE PARTS GROUP - INTERNAL VIEW (Cont.)

17	(CO)F400B-350	1	Cap, Bearing - Center.
18	185-654	1	*Bearing, Crankshaft - Center Upper and Lower - (CO)F400G-3111.
19	(CO)F400B-349	1	Cap, Bearing - Rear.
20	185-667	1	*Bearing, Crankshaft - Rear Upper and Lower - (CO)F600G-3471.
21	(CO)X-14455	6	Washer, Plain - 1/2"-Cr. Bearing Cap to Cylinder - Replaces (CO)3X-B2B-110.
22	(CO)X-2986	4	Screw, Crankshaft Bearing Cap - Front and Rear - 1/2-13 x 2-1/2".
23	(CO)6SH-100	2	Wire, Lock - No. 19 x 10 - Replaces (CO)X-1333-B.
24	(CO)X-3511	2	Screw, Crankshaft Bearing Cap - Center - 1/2-13 x 3-1/4".
25	(CO)6SH-100	1	Wire, Lock - No. 19 x 12 - Replaces (CO)X-1333-B.
26	185-628	2	Rod & Cap Assy. (Including Bearings, Bushings, Bolts & Nuts, Cylinder 1-3) - (CO)F400D-5021.
26	185-627	2	Rod & Cap Assy. (Including Bearings, Bushings, Bolts & Nuts, Cylinder 2-4) - (CO)F400D-3031.
27	185-659	4	*Bearing (1-3 Connecting Rods) - (CO)F600G-341 - Included in F400T-155 Kit.
27	185-660	4	*Bearing (2-4 Connecting Rods) - (CO)F600G-342 - Included in F400T-159 Kit.
28	(CO)F400G-211	4	*Bushings, Piston Pin.
29	(CO)C600D-206	8	Bolts, Connecting Rod.
30	(CO)X-18188	8	Nut, Connecting Rod Bolt - 3/8-24.
31	(CO)X-601	8	Pin, Cotter - Connecting Rod Bolt - 3/32 x 3/4".
32	185-511	4	*Piston and Pin Assembly - (CO)F162A-4101-E.
33	(CO)X-7011	8	Ring, Piston Pin Retaining.
33	185-573	4	*Pin, Piston - (CO)111EA-200.
34		4	Piston Only - Less Pin - Order Piston and Pin Assembly.
35	(CO)F162A-302	4	*Ring, Piston - Bottom Groove.
36	185-500	12	*Ring, Piston - First, Second and Third Grooves - (CO)A600A-333.
37	185-605	6	Bolt, Flywheel to Crankshaft - (CO)C400C-206.
38	854-20	6	Washer, Lock - 3/8" - Flywheel - (CO)X-297.
39	104A91	6	Nut - 3/8-24 - Flywheel Mounting - (CO)X-18237.
40	(CO)F162C-321	1	Flywheel and Ring Gear.
41	(CO)8FC-304	1	Gear, Ring.
42	113-73	1	*Ring Set, Piston - Complete, for 1 Piston.
	185-820	1	*Kit, Piston Ring - Complete for 4 Pistons - For Re-ring - Expander Type-Std. Size-(CO)162T-152C.
	(CO)162T153C	1	*Kit, Piston Ring - Complete for 4 Pistons - For Re-bore - Standard Size.
	185-824	1	*Bearing Kit, Main (Complete for Engine) - (CO)F400T-151.
	185-825	1	*Bearing Kit, Rod (Complete for Engine) - (CO)F400T-152.

* - Refer to, Available Oversize and Undersize Parts Chart.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 3 - CAMSHAFT AND OIL PUMP PARTS GROUP			
1	185-714	1	Camshaft - (CO)F400I-403.
2	(CO)X-2977	2	Screw and Washer Assembly - 3/8-16 x 7/8" - Camshaft Thrust Plate.
4	185-706	1	Plate, Thrust - Camshaft - (CO)D600I-259.
6	(CO)F600L-203	1	Plate, Oiler - Timing Gear.
7	(CO)X-14220	1	Washer, Lock - 3/8" Camshaft Thrust Plate - Replaces (CO)X-270.
8	(CO)X-3362	1	Screw, - 7/16-14 x 1-1/4" - Camshaft Thrust Plate to Crankcase.
9	185-700	1	*Gear, Timing - Camshaft - (CO)F400H-310.
10	515-94	1	Key - Woodruff No. 6 - (CO)X-506.
11	185-705	1	Lock, Nut to Timing Gear - (CO)D600I-258.
12	(CO)X-18242	1	Nut, 3/4-16" - Camshaft Timing Gear.
13	(CO)F226G-227	1	Bushing, Camshaft - Front - Replaces (CO)F600G-295.
14	(CO)Y400G-231	1	Bushing, Camshaft - Center - Replaces (CO)Y400G-228.
15	(CO)Y400G-232	1	Bushing, Camshaft - Rear - Replaces (CO)Y400G-229.
	(CO)F600I-2520	8	Tappet, Valve - Self Locking - Replaces (CO)Y400I-2110.
16	(CO)Y400I-211	8	Tappet Only, Valve - Order (CO)F600I-2520.
17	(CO)Y400I-212	8	Nut, Lock - Valve Tappet - Use with Y400I-211 Only.
18	(CO)Y400I-213	8	Screw, Adjusting - Valve Tappet - Use with Y400I-211 Only.
19	185-745	8	Cap, Roto - Positive Valve Rotation Type - (CO)Z120I-3000.
20	185-735	8	Spring, Valve - Intake and Exhaust - (CO)Y400I-215.
21	(CO)F400I-233	8	Guide, Valve Stem.
22	(CO)F226A-238	4	Insert, Valve Seat - Exhaust - Replaces (CO)F600A-239 - .010" Oversize.
23	185-744	16	Lock, Retainer - Valve Spring (Roto) - (CO)Z120I-235.
24	185-713	4	Valve, Exhaust (CO)F400I-328 - Replaces (CO)F400I-320.
24	185-719	4	Valve Intake - (CO)F600I-343.
25	(CO)F400L-210	1	Bushing, Oil Pump Drive Shaft (In Crankcase).
	185-790	1	Pump Assembly, Oil - (CO)F600L-4131.
26	(CO)F600H-205	1	Gear, Oil Pump Drive - Replaces (CO)D600H-220.
27	(CO)X-17095	1	Pin, 3/16 x 15/16 - Oil Pump Drive Gear to Shaft - Replaces (CO)6UH-101.
28	(CO)F600L-4130	1	Body Assembly, Oil Pump - Includes Body and Bushing.
29	(CO)D600G-274	1	Bushing, Oil Pump Drive Shaft - (In Pump Body).
30	(CO)F218L-204	1	Shaft, Drive - Oil Pump.
31	515-1	1	Key, Woodruff No. 3 - Oil Pump Drive Gear to Shaft (CO)X-584.

* - Refer to, Available Oversize and Undersize Parts Chart.

REF. PART
NO. NO.

QUANT.
USED

DESCRIPTION

FIG. 3 - CAMSHAFT AND OIL PUMP PARTS GROUP (Cont.)

32	(CO)F600H-217	1	Gear, Driver - Oil Pump.
33	(CO)F600H-218	1	Gear, Idler - Oil Pump.
34	(CO)8UL-212	1	Stud, Oil Pump Idler Gear.
35	(CO)D600L-204	1	Ring, Snap - Oil Pump Drive Shaft.
36	185-789	1	Gasket, Oil Pump Cover - (CO)C400L-231.
37	(CO)F400L-2511	1	Cover Assembly, Oil Pump.
38	185-801	1	Gasket, Oil Pump Strainer Frame - (CO)17EL-204.
39	(CO)17EL-300	1	Frame, Oil Pump Strainer Screen.
40	(CO)C400L-228	1	Spacer, Oil Pump Suction Cup.
41	850-40	6	Washer, Oil Pump Cover to Body - (CO)X-201.
42	(CO)X-5798	6	Screw, Oil Pump Cover to Body - Replaces (CO)X-3056.
43	(CO)D600L-2120	1	Screen Assembly, Oil Pump Strainer.
44	185-859	1	Stud, Oil Pump to Bearing Cap - 3/8-16 x 1-1/2" - (CO)X-20040.
45	(CO)X-226	1	Washer, Oil Pump to Bearing Cap - Replaces (CO)X-203.
46	(CO)X-1802-G	1	Nut, Oil Pump to Bearing Cap - 3/8-16"
	(CO)X-14294	1	Washer, 3/8 x 1/8 - Between Bearing Cap and Oil Pump Mounting Lug.
	(CO)F400T-181	1	Kit, Camshaft Bushing (Finish Reamed).
	(CO)F400T-314	1	Kit, Valve Tappet
	(CO)F600T-293	1	Kit, Oil Pump Repair.

FIG. 4 - WATER PUMP PARTS GROUP

1	(CO)F400K-3947	1	Pump, Water - Replaces (CO)F400K-3941.
2	(CO)F400T-253	1	Kit, Water Pump Repair Parts (For servicing F400K-3941 and F400K-3947).
3	(CO)X-3794	4	Screw, Cover to Body.
4	(CO)F400K-392	1	Cover, Water Pump.
5	(CO)F400K-391	1	Gasket, Water Pump Cover.
6	(CO)F162K-2560	1	Impeller, Water Pump - Replaces (CO)F400K-393.
7	(CO)NG2K-211	1	Seal, Water Pump.
8	(CO)F400K-291	1	Shedder, Water.
	(CO)X-7022	1	Ring, Seat Bearing.
	183-751	1	Shaft and Bearing - (CO)F226K-2230.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 4 - WATER PUMP PARTS GROUP (Cont.)			
9	185-845	1	Hose, Water Pump to Water Outlet Elbow - (CO)X-2441.
10	503-49	2	Clamp, Hose - Water Pump - (CO)X-2376.
11	505-135	2	Nipple, 3/8" Pipe - Water Pump Outlet - (CO)X-12517.
12	(CO)F400K-418	1	Body, Water Pump.
13	(CO)X-7021	1	Retainer, Water Pump Bearing.
17	185-754	1	Hub, Fan - (CO)F400K-385.
19	850-51	3	Washer, Lock - 3/8" - Water Pump - (CO)X-203.
20	800-55	3	Screw, 3/8-16 x 2-1/4" - Water Pump to Cylinder - (CO)X-3939.
21	800-51	1	Screw, 3/8-16 x 1-1/4" - Water Pump to Cylinder - (CO)X-3063.
22	(CO)X-14134	1	Washer, Copper - 3/8" - Water Pump to Cylinder.
23	185-752	1	Gasket, Water Pump to Cylinder Block - (CO)F400K-340.
	(CO)K600K-220	1	Gasket, Water Pump Seal - (Not Illustrated).

FIG. 5 - OIL SYSTEM GROUP

1	122-91	1	Filter, Oil - Complete with Cartridge and Wide Mounting Bracket.
2	122-37	1	Cartridge, Oil Filter Refill - Includes Gaskets.
3	502-2	2	Elbow, Inverted Male - Oil Filter Lines.
			Line, Oil Filter Return -
4	122A86	1	For Parts Key Nos. 1 through 5.
	501A22	1	For Parts Key No. 6 (Flexible) Not Illustrated.
5	122A87	1	Line, Oil Filter Inlet.
6	520A221	2	Stud, Oil Filter Mounting.
7	505-50	1	Elbow, Pipe Street - Oil Drain - 1/2".
8	505-100	2	Nipple, Pipe Close - Oil Drain - 1/2".

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 5 - OIL SYSTEM GROUP (Cont.)			
9	504-11	1	Valve, Oil Drain - 1/2".
10	503-197	1	Clamp, Hose - Oil Drain.
11			Hose, Oil Drain -
	503-94	1	For Parts Key Nos. 1 through 5 Prior to Spec F (13" Long).
12	503-316	1	For Parts Key No. 6 (Also used on Parts Key Nos. 1 through 5 Begin Spec F) 11" Long.
13	123B96	1	Tube, Oil Fill.
	123A20	1	Cap, Oil Fill Tube.
	505-7	1	Bushing, Pipe Reducer - 1/4 to 1/8".
	502-1	1	Tee, Inverted.

Note: Refer to Control Group for Oil Pressure Gauge and Sending Unit.

FIG. 6 - MUFFLER GROUP

1	155A380	1	Ring, Exhaust Clamp - Parts Key Nos. 1 through 5 Prior to Spec F.
2	155B377	1	Elbow, Exhaust - 1-5/16 O.D. Tubing at manifold end - Housed Plants only with Parts Key Nos. 1 through 5 Prior to Spec F.
3	505-43	1	Elbow, Pipe - Muffler Outlet - 1-1/2" - Housed Plants only with Parts Key Nos. 1 through 5 Prior to Spec F.
4			Muffler, Exhaust -
	155B77	1	Parts Key Nos. 1 through 5 Prior to Spec F.
	155B456	1	Parts Key Nos. 1 through 5 Begin Spec F.
	155C438	1	Parts Key No. 6.
5	155B74	1	Bracket, Muffler Mounting - Parts Key Nos. 1 through 5 Prior to Spec F.
6	155A390	1	Pipe, Exhaust - Unhoused Plants only with Parts Key Nos. 1 through 5 Prior to Spec F.
7			Tube, Flexible Exhaust -
	155B185	1	Parts Key Nos. 1 through 5 Prior to Spec F (Unhoused Plants only).
	155B467	1	Parts Key Nos. 1 through 5 Begin Spec F.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 6 - MUFFLER GROUP (Cont.)			
8	155A565	1	Flange, Muffler Mounting -
	155A441	1	Parts Key Nos. 1 through 5 Begin Spec F.
9	154P351	1	Parts Key No. 6.
	155A445	1	Gasket, Muffler Mounting Flange -
	505-183	1	Parts Key Nos. 1 through 5 Begin Spec F.
		1	Parts Key No. 6.
		1	Elbow, Pipe Reducer - 1-1/2 to 1-1/4 - Muffler Outlet - Unhoused Plants only with Parts Key Nos. 1 through 5 Prior to Spec F.

FIG. 7 - GOVERNOR AND GOVERNOR LINKAGE GROUP

1	151P114	1	Governor Assembly - With Gear (For component parts, see separate group) -
	151P175	1	*Prior to Spec E (HOF)6D268-C5127.
	151P182	1	*Spec E Only - Prior to Serial #590078 (HOF)6D270-C5137.
2	151A139	1	Begin Serial #590078 (HOF)6D270-C7147.
3	185-819	1	Gasket, Governor Mounting.
4	(CO)F400S-201	1	Gasket, Governor Flange Plate - (CO)Y91S-215.
5	(CO)X-318	1	Plate, Governor Flange (Kidney Shaped).
6	(CO)X-3283	1	Gasket, Governor to Gear Cover - Upper - 3/8" Copper Asbestos.
7	520A479	1	Screw, Governor to Gear Cover - 3/8-16 x 3-5/8" Long.
8	150A638	2	Stud, Governor Link.
9	150A432	1	Joint, Ball - Governor Link - 1/4-28 Thread (Replaces #150A69).
			Linkage Assembly, Governor.

* - For complete assembly, use #151P182.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 8 - GOVERNOR PARTS GROUP - PLANTS PRIOR TO SPEC E			
	151P114	1	Governor - Complete (Includes Gear) - (HOF) #GD268-C5127 (For complete assembly, use Governor #151P182.
1	(HOF)D104-80	1	Lever, Throttle.
2	(HOF)D164-110	1	Lever Assembly - Includes Lever and following 9 parts not individually illustrated.
	(HOF)D132-81	1	Pin, Sensitivity Adjusting.
	(HOF)D117-86	1	Washer, Adjusting Pin.
	(HOF)D117-87	1	Washer, Lock - Adjusting Pin.
	(HOF)C115-29	1	Nut, Adjusting Pin.
	(HOF)D105-114	1	Link, Spring Attaching.
	(HOF)D129-21	1	Bushing, Spring Link.
	(HOF)D133-17	1	Bearing, Spring Link.
	(HOF)D117-86	1	Washer, Spring Link.
	(HOF)D165-33	1	Retainer, Link to Pin - Replaces (HOF)D165-18.
3	(HOF)D132-76	1	Pin, Throttle Lever to Rocker Shaft.
4	(HOF)D110-57	2	Spring, Speed Adjusting (120 #Rate - Black).
5	(HOF)D165-32	4	Retainer, Flyweight Pivot Pin - Replaces (HOF)D165-17.
6	(HOF)C132-88	2	Pin, Flyweight Pivot - Replaces (HOF)C132-59.
7	(HOF)D164-118	2	Flyweight, Complete with Bearing and Pin.
8	(HOF)D114-128	3	Screw - (1) Bearing to Cover, (2) Cover to Body.
9	(HOF)D117-88	3	Washer, Lock - (1) Bearing to Cover, (2) Thrust Lever to Shaft.
10		1	Cover, Body - NOT SOLD SEPARATELY.
11	(HOF)D147-7	1	Key, Gear to Shaft.
12	(HOF)D171-11	1	Gear, Drive
13	(HOF)D117-76	1	Washer, Lock - Gear to Shaft.
14	(HOF)H115-23	1	Nut, Gear to Shaft.
15	(HOF)D133-18	1	Bearing, Front Main Ball.
16	(HOF)D164-122	1	Shaft and Yoke, Main - Rotating and Flyweights Attaching Member.
17	(HOF)D164-117	1	Sleeve, Thrust Bearing and.
18	(HOF)D133-14	1	Bearing, Rear Main - Bushing Type.
19		1	Body - NOT SOLD SEPARATELY.
20	(HOF)D133-10	2	Bearing, Needle - Rocker Shaft - Use (HOF)D164-187 Body Assembly.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 8 - GOVERNOR PARTS GROUP - PLANTS PRIOR TO SPEC E (Cont.)			
21	(HOF)D150-89	2	Spacer, Welch Plug.
22	(HOF)D140-18	1	Plug, Welch.
23	(HOF)C164-86	1	Screw, Bumper - Complete with Spring and Nut.
24	(HOF)D127-74	1	Shaft, Rocker - Use (HOF)D164-187 Body Assembly.
25	(HOF)D108-6	1	Seal, Oil - Rocker Shaft - Use (HOF)D164-187 Body Assembly.
26	(HOF)D117-72	1	Washer, Lever Spacer.
27	(HOF)D114-106	1	Screw, Bushing to Body.
28	(HOF)D117-87	1	Washer, Lock - Bushing to Body.
29	(HOF)D129-18	1	Bushing, Speed Adjusting Lever Pivot.
30	(HOF)D114-124	2	Screw, Thrust Lever to Rocker Shaft.
31	(HOF)D164-111	1	Lever and Yoke, Speed Adjusting.
32	(HOF)D114-129	1	Screw, Adjusting.
33	(HOF)C115-29	1	Nut, Lock - Speed Adjusting Screw.
34	(HOF)D105-67	1	Lever, Rocker Thrust.
	(HOF)C107-41	1	Gasket, Bumper Screw Nut.

FIG. 8A - GOVERNOR PARTS GROUP - PLANTS BEGIN SPEC E

Governor - Complete with Gear.			
1	151P175	1	Prior to Serial #590078 (HOF)GD270-C5137 (For complete assembly, use #151P182).
	151P182	1	Begin with Serial #590078 (HOF)GD270-C7147.
1	(HOF)D104-145	1	*Lever, Throttle.
2		1	Sensitivity Assembly - Includes Lever and following indented parts, not individually illustrated -
	(HOF)D132-81	1	Pin, Sensitivity Adjusting -
	(HOF)D132-83	1	Prior to Serial #590078.
	(HOF)D165-33	1	Begin with Serial #590078.
	(HOF)D117-86	1	Retainer, Spring Bushing to Pin - Replaces (HOF)D165-18.
	(HOF)D117-46	1	Washer, Sensitivity Pin to Spring Bushing - Prior to Serial #590078.
		1	Washer, Sensitivity Spring.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 8A - GOVERNOR PARTS GROUP - PLANT'S BEGIN SPEC E (Cont.)

	(HOF)D129-29	1	Bushing, Spring Link - Prior to Serial #590078.
	(HOF)D133-17	1	Bearing, Spring Link - Prior to Serial #590078.
	(HOF)D105-127	1	Link, Spring - Begin with Serial #590078.
	(HOF)D117-85	1	Spacer, Spring Link - Begin with Serial #590078.
	(HOF)D117-87	1	Washer, Lock - Adjusting Pin.
	(HOF)D115-29	1	Nut, Adjusting Pin.
	(HOF)D132-76	1	*Pin, Throttle Lever to Rocker Shaft.
	(HOF)D165-31	1	*Retainer, Bearing to Shaft.
	(HOF)D117-72	1	*Washer, Lever Spacer.
3	(HOF)D114-133	1	Screw, Speed Adjusting.
4	(HOF)D115-29	1	Nut, Lock - Speed Adjusting Screw.
5			Lever, Speed Adjusting -
6	(HOF)D105-223	1	Prior to Serial #590078.
	(HOF)D105-292	1	Begin with Serial #590078.
7	(HOF)D129-18	1	Bushing, Adjusting Lever Pivot.
8	(HOF)D117-87	1	Washer, Lock - Adjusting Lever to Body.
9	(HOF)D114-179	1	Screw, Adjusting Lever to Body.
10			Spring, Speed (120 #Rate - Black) -
	(HOF)D110-85	1	Prior to Serial #590078.
	(HOF)D110-57	1	Begin with Serial #590078.
11	(HOF)D164-120	1	Screw, Bumper - Complete with Spring, Nut and Seal.
12	(HOF)D127-133	1	*Shaft, Rocker.
13	(HOF)D133-24	2	*Bearing, Rocker Shaft.
14	(HOF)D108-23	1	*Seal, Rocker Shaft Oil - Replaces (HOF)D108-8.
15	(HOF)D105-67	1	Lever, Rocker Shaft.
16	(HOF)D114-163	2	Screw, Lever to Rocker Shaft.
17	(HOF)D150-101	2	*Spacer, Welch Plug.
18	(HOF)D140-24	1	*Plug, Welch.
19	(HOF)D133-14	1	*Bearing, Rear Main - Bushing Type.
20			*Body only - NOT SOLD SEPARATELY.
21	(HOF)D164-293	1	Gear Assembly - Includes Gear, Shaft, Cover, Ball Bearing, Rivet and Yoke.
22	(HOF)D164-393	1	Thrust Sleeve and Bearing Assembly - Includes Sleeve, Bearing, Washer and Retainer.

* - Included in Body Assembly (HOF)D164-451.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 8A - GOVERNOR PARTS GROUP - PLANTS BEGIN SPEC E (Cont.)			
23	(HOF)D164-118	2	Flyweight Assembly - Includes Thrust Pin and Bearing - Prior to Serial #590078.
	(HOF)D164-547	2	Begin with Serial #590078.
24	(HOF)D132-88	2	Pin, Flyweight Pivot.
25	(HOF)D165-32	4	Retainer, Flyweight Pivot - Replaces (HOF)D165-17.
26	(HOF)D114-128	1	Screw, Cover to Body.
27	(HOF)D164-451	1	Body Assembly - Includes parts marked (*).

FIG. 9 - FUEL SYSTEM GROUP - GASOLINE

1	143K60	1	Gasket Kit, Carburetor.
2	153A26	1	Gasket, Insulating - Choke Control to Manifold.
			Choke, Automatic - Sisson (Note: Not used on units with water cooled manifold) - Parts Key Nos. 1 through 5 (12 Volt).
3	153P87	1	Parts Key No. 6 (6 Volt).
4	153A195	1	Parts Key No. 6 (6 Volt).
	503-107	3	Clamp, Hose - Air Cleaner Hose Mounting (Replaces #503A22).
			Rod, Choke Control -
5	153A159	1	Parts Key Nos. 1 through 5 Prior to Spec F (11-1/8" Long).
	153A199	1	Parts Key No. 6 (Also used on Parts Key Nos. 1 through 5 Begin Spec F) 10" Long.
			Clip, Choke Control Rod End -
	518-6	1	Parts Key Nos. 1 through 5 Prior to Spec F.
	518-47	1	Parts Key No. 6 (Also used on Parts Key Nos. 1 through 5 Begin Spec F).
6	140A218	1	Bracket, Air Cleaner Hose Mounting.
7	140B303	1	Cleaner, Air.
8	140A78	2	Band, Air Cleaner.
9	140B311	1	Bracket, Air Cleaner -
9A	140B287	1	Parts Key Nos. 1 through 5 Prior to Spec F (Unhoused Plants only).
			Parts Key Nos. 1 through 5 Begin Spec F (Also used on Parts Key Nos. 1 through 5 Housed Plants Prior to Spec. F).
	140B368	1	Parts Key No. 6.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 9 - FUEL SYSTEM GROUP - GASOLINE (Cont.)			
10	503A205	1	Hose, Air Cleaner - Parts Key Nos. 1 through 5 (32") Note: Hose must be shortened slightly for Unhoused models Prior to Spec F.
	503A272	1	Parts Key No. 6 (36").
11	503A207	1	Hose, Breather - Valve Compartment Cover to Air Cleaner - Parts Key Nos. 1 through 5 Prior to Spec F. (Housed Plants only).
	503A262	1	Parts Key Nos. 1 through 5 Begin Spec F (Also used on Parts Key Nos. 1 through 5 Unhoused Plants Prior to Spec F).
	503-186	1	Parts Key No. 6.
12	503P131	2	Clamp, Breather Hose.
13	149A394	1	Line, Fuel - Pump to Carburetor.
14	143C21	1	Carburetor, Gasoline - Carter #UT-2054s (Note: Not used on plants with water cooled manifold).
15	141-281	1	Gasket, Carburetor to Manifold.
16	508-2	1	Grommet, Rubber - 3/8" I.D.
17	505-19	1	Bushing, Pipe Reducer - 1/2 to 3/8 - Breather.
18	505A135	1	Nipple, Pipe Half - 3/8 x 1-1/2" - Breather.
19	149P61	1	Pump, Fuel.
20	149A126	1	Gasket, Fuel Pump Mounting.
21	502-2	2	Elbow, Inverted Male - (1) Carburetor, (1) Fuel Pump.
	502-65	1	Elbow, Inverted - 45°.
22			Stud, Carburetor Mounting - 5/16 x 1-1/4"
	520A223	1	5/16 x 1-1/2".
23	520A567	1	Shield, Drip - Carburetor.
	145B298	1	Repair Parts Kit, Fuel Pump (Replaces #149K75).
	149K508	1	Lead, Choke Ground - Parts Key Nos. 1 through 5 Begin Spec F.
	336A505	1	†Carburetor, Gasoline - Basic #143C21 with provision for ONAN Choke.
	143A58	1	†Adapter, ONAN Choke - Mounts to Carburetor.
	153A155	1	†Housing, Thermostatic Bi-Metal - ONAN Choke.
	153A58	1	†Bi-Metal, Thermostatic - ONAN Choke.
	153-57	1	†Cover, ONAN Choke - 12-17 Volt heating element - 12 Volt cranked plants only.
	153A49	1	†Shaft, Carburetor Choke - Includes knurled knob - For plants with ONAN Choke.
	143A57	1	

† - These parts apply for plants with special water cooled manifold. Onan electric choke is used instead of Sisson Automatic Choke.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
	FIG. 10 - CARBURETOR PARTS GROUP - GASOLINE		
	143C21	1	Carburetor - Carter Updraft
	143K65	1	Kit, Carburetor Repair Parts - Includes parts marked (†).
	143K60	1	†Kit, Carburetor Gasket - Includes parts marked (★).
1	143-23	1	Body Assembly, Throttle (Not Sold Separately).
2	141-281	1	★Gasket, Flange - Interchangeable with (CAR)#1A-48 or (CO)#NF-104.
3	143-25	1	Valve, Throttle.
4	143-26	1	†Shaft and Lever, Throttle.
5	143-27	1	Valve, Choke.
6	143-28	1	†Jet, Low Speed.
7	143-29	2	Plug, Rivet.
8	143-30	1	Plug, Rivet.
9	143-31	1	Plug, Idle Port Rivet.
10	143-32	1	Plug, Bowl Drain.
11	143-33	1	†Nozzle.
12	143-34	1	Shaft and Lever, Choke.
13	143A15	2	★Gasket, Nozzle.
14	143-36	1	★Gasket, Main Metering Screw.
15	143-37	1	Float and Lever.
16	143-38	1	†Pin, Float Lever.
17	143-39	1	†Needle and Seat.
18	143-40	1	Screw, Idle Adjustment.
19	812-14	4	†Screw, Throttle and Choke Valve Attaching.
20	(CAR)47-26	2	Plug, Welch.
21	143-42	1	Venturi.
22	143-43	1	Spring, Idle Adjustment Screw.
23	143-44	4	Screw and Washer, Body Attaching.
24	143-45	1	Screw, Throttle Adjusting.
25	143-46	1	★Gasket, Body.
26	143-47	1	Retainer, Air Horn Dust Seal.
27	143-48	2	Retainer, Choke and Throttle Shaft Dust Seal.
28	143-49	1	†Screw and Needle, Adjustable Main Metering.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 10 - CARBURETOR PARTS GROUP - GASOLINE (Cont.)			
29	143-50	2	†Seal, Choke and Throttle Shaft Dust.
30	143-51	1	†Felt, Air Horn Drain.
31	143-52	1	†Packing, Main Metering Screw.
			★- Included in Carburetor Gasket Kit.
			†- Included in Carburetor Repair Parts Kit.
FIG. 11 - MOUNTED FUEL TANK GROUP - HOUSED PLANTS ONLY (OPTIONAL EQUIPMENT)			
1	193K1	1	Gauge Kit, Fuel - Includes Tank Element and Gasket, and Panel Gauge.
2	193B15	1	Element, Fuel Gauge - Tank Unit.
3	193A10	1	Gasket, Fuel Gauge - Tank Element.
4	193A11	1	Gauge, Fuel - Panel Unit.
5	336A345	1	Wire, Fuel Gauge.
6	123A250	1	Cap, Breather Pipe.
7	505-121	1	Nipple, Pipe - Breather.
8	159B20	1	Cap, Fuel Tank.
9			Band, Fuel Tank Mounting -
	159B365	2	Parts Key Nos. 1 through 5.
	159D482	4	Parts Key No. 6.
10			Tank, Fuel -
	159D70	1	Parts Key Nos. 1 through 5.
	159D456	1	Parts Key No. 6.
11	502-20	1	Elbow, Fuel Line.
12	505-49	2	Elbow, Street.
13			Valve, Fuel Shut-Off -
	504-4	1	Parts Key Nos. 1 through 5 (3 Way).
	504A16	1	Parts Key No. 6 - (Not illustrated).
14	502-46	1	Nipple, Close.
15			Line, Fuel -
	501A9	1	Parts Key Nos. 1 through 5 (36").
	501A7	1	Parts Key No. 6 (24").

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 11 - MOUNTED FUEL TANK GROUP - HOUSED PLANTS ONLY (OPTIONAL EQUIPMENT) Cont.			
16	149A12	1	Filter, Fuel.
17	149-157	1	Gasket, Fuel Filter Bowl.
	505-57	1	Plug, Pipe.
	502-53	1	Elbow, 45° - Parts Key No. 6.

FIG. 12 - FUEL SYSTEM GROUP - OPTIONAL (GAS ONLY or GAS-GASOLINE COMBINATION)

NOTE: Two types of gas pressure regulators have been used. Compare nameplate on regulator for manufacturer.

* - Ensign Manufacture Regulator and associated parts used prior to Serial #576166.

▲ - Garretson Manufacture Regulator and associated parts used begin with Serial #576166.

† - These parts used both prior to: and begin with above serial number.

1	148K341	1	Conversion Kit, Gas-Gasoline Combination - Includes all parts marked ▲ or † (unless specified as for Gas Fuel only).
1A	148K349	1	Conversion Kit, Gas Fuel only - Includes all parts marked ▲ or † (unless specified as for Gas-Gasoline only).
2	148-9	1	Regulator, Gas Pressure -
	148-311	1	*Ensign Manufacture.
			▲Garretson Manufacture.
	503-158	1	Hose, Rubber - Regulator to Carburetor -
	503-260	1	*5/8" I.D. x 36" Long.
3	503-49	2	▲5/8" I.D. x 42" Long.
4	505-131	1	†Clamp, Hose.
5	505A135	1	*Bushing, Reducer - Regulator Outlet (3/4" x 3/8" I.P.S.).
6	505-8	1	†Nipple, Pipe Half - Regulator to Hose - 3/8" I.P.S.
7	505-57	1	Plug, Pipe - Regulator - 1/8" -
8	505-39	1	*Slotted Head.
			▲Square Head.
			▲Elbow, Pipe - Regulator Outlet (3/8" x 90°).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 12 - FUEL SYSTEM GROUP - OPTIONAL (GAS ONLY or GAS-GASOLINE COMBINATION) Cont.			
9	505-130	1	▲ Plug, Pipe - Regulator - 3/4".
10	505-101	1	▲ Nipple, Pipe - Regulator Outlet (3/8" x 1").
11	148A107	1	▲ Vent, Atmospheric - Regulator.
12	141A281	1	† Gasket, Carburetor Mounting.
13	143B62	1	* Carburetor Assembly, Gas-Gasoline Combination - Includes indented parts marked * or † (Unless specified as for Gas Fuel only) Note: For parts not listed in this group, refer to the Gasoline Carburetor Parts Group.
13A	143B148	1	▲ Carburetor Assembly, Gas-Gasoline Combination - Includes indented parts marked ▲ or † (Unless specified as for Gas Fuel only) Note: For parts not listed in this group, refer to the Gasoline Carburetor Parts Group.
14	148C206	1	* Carburetor Assembly, Gas Fuel only - Includes indented parts marked * or † (Unless specified as for Gas-Gasoline only).
14A	149C348	1	▲ Carburetor Assembly, Gas Fuel only - Includes indented parts marked ▲ or † (Unless specified as for Gas-Gasoline only).
15	520A223	1	Stud, Carburetor Mounting - 5/16 x 1-1/4".
16	520A567	1	5/16 x 1-1/2".
	145B299	1	Shield, Drip - Carburetor.
	148A171	1	* Counterweight, Choke.
	148A209	1	* Shaft, Choke.
	148A210	1	* Butterfly, Choke Shaft.
	143-26	1	† Shaft and Lever, Throttle - GAS FUEL ONLY.
	148C203	1	† Body, Carburetor - GAS FUEL ONLY.
	142-344	1	† Needle, Idle Adjusting - GAS FUEL ONLY.
	142-76	1	† Spring, Idle Adjusting Needle - GAS FUEL ONLY.
	505A135	1	† Nipple, Pipe Half - Fuel Connection (3/8" x 1-1/2" Long) - GAS FUEL ONLY.
			† Venturi - GAS FUEL ONLY.
	148A207	1	GAS-GASOLINE ONLY.
	143-54	1	Adapter Assembly - Includes counterweight, choke shaft, butterfly and hardware - GAS-GASOLINE ONLY.
	148A219	1	GASOLINE ONLY.
	148B520	1	† Adapter, Air Hose and Choke - GAS FUEL ONLY - Replaces 148B204.
	148A205	1	† Gasket, Carburetor Body to Adapter - GAS FUEL ONLY.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 12 - FUEL SYSTEM GROUP - OPTIONAL (GAS ONLY or GAS-GASOLINE COMBINATION) Cont.			
148A208		1	†Screw, Gas Adjusting (Power Jet) GAS FUEL ONLY.
143-25		1	†Butterfly, Throttle Shaft - GAS FUEL ONLY.
143-45		1	†Screw, Idle Stop - GAS FUEL ONLY.
148A222		1	†Float, Fuel Level - GAS-GASOLINE ONLY.
148A17		1	†Gasket, Bushing - Float Lock Mechanism - GAS-GASOLINE ONLY.
148A223		1	†Lock, Float - GAS-GASOLINE ONLY.
148A224		1	†Valve, Gas Fuel Inlet - GAS-GASOLINE ONLY.
502-2		1	†Elbow, Inverted Male - GAS-GASOLINE ONLY.
803-2		1	*Screw, Set - Socket Head - Counterweight
812-15		2	*Screw, Round Head - Butterfly to Choke Shaft (3-48 x 1/4").
812-15		2	†Screw, Round Head - Butterfly to Throttle Shaft (3-48 x 1/4") GAS FUEL ONLY.
854-3		2	*Washer, Shakeproof - Butterfly to Choke Shaft Screw.
854-3		2	†Washer, Shakeproof - Butterfly to Throttle Shaft Screw.
868-4		1	†Nut, Hex Jam - Power Adjusting Screw (7/16-20) GAS FUEL ONLY.
800-7		2	†Screw, Hex Head Cap - Carburetor Body to Adapter (1/4-20 x 1") GAS FUEL ONLY.
850-40		2	†Washer, Lock - Carburetor Body to Adapter Screw (1/4") GAS FUEL ONLY.
517A30		1	†Plug - Passage in Body - GAS FUEL ONLY.
517A10		2	*Plug - Adapter Holes - GAS FUEL ONLY - Used only on Early Models.
850-40		1	*Washer, Lock - Adapter to Carburetor Clamp Screw (1/4") GAS-GASOLINE ONLY.
812-152		1	*Screw, Round Head - Clamps Adapter to Carburetor Body (1/4 x 7/8") GAS-GASOLINE ONLY.
815-118		1	†Screw, Fillister Head - Lock Automatic Choke (6-32 x 1/4") GAS-GASOLINE ONLY.
870-135		1	*Nut, Pal - Gas Fuel Inlet Valve to Carburetor Body (7/16-20) GAS-GASOLINE ONLY.

*, ▲ or † - See Note at beginning of this group.

FIG. 13 - SEPARATE FUEL TANK AND DAY TANK GROUP - OPTIONAL EQUIPMENT

159A306	1	Tank Assembly, Reservoir (Day) Optional on Parts Key Nos. 1 through 5.
159A540	1	Prior to Spec F (Housed Plants only) Includes parts marked *.
159A664	1	Prior to Spec F (Unhoused Plants only) Includes parts marked *.
159A734	1	Prior to Serial #643150 Spec F Models only (Includes parts marked * or †).
		Begin Serial #643150 during Spec F (Includes parts marked *, † or ▲).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 13 - SEPARATE FUEL TANK AND DAY TANK GROUP - OPTIONAL EQUIPMENT (Cont.)			
1	415B126	1	Tank, Fuel - Dome Top - 5 Gallon (Replaces Flat Top Tank #415A10).
2	504A13	1	Valve, Shut Off - For Separate 5 Gallon Tank.
3	501A27	1	Line, Fuel - Separate Tank to Plant.
4	415B124	1	Cap, Rain - Rubber.
5	159B294	1	*Tank, Reservoir (Day or Standby).
6	159A641	1	*Band, Reservoir Tank -
6A	159A121	1	Begin with Spec F.
7	159A657	1	Prior to Spec F.
7A	159B302	1	*Bracket, Reservoir Tank Mounting -
7B	159A419	1	Begin with Spec F.
8	502-24	2	Prior to Spec F (Housed Plants only).
9	505-17	1	Prior to Spec F (Unhoused Plants only).
10	159A705	1	*Elbow, Male Compression.
11	504A39	1	*Bushing, Reducer - Pipe.
12	505-57	2	Prior to Serial #643150.
13	159C656	1	Begin Serial #643150.
14	149A509	1	*Valve, Shut off - With Strainer - Prior to Serial #643150.
15	149A521	1	*Plug, Pipe - Square Head (NOTE: Quantity is 1 only prior to Serial #643150)
16	159C655	1	Line, Fuel - Reservoir Tank to Pump -
17	149A510	1	†Begin with Spec F.
18	149A522	1	Prior to Spec F (Housed Plants only).
19	307P565	1	Prior to Spec F (Unhoused Plants only).
20	502-82	1	Line, Fuel - Reservoir Tank to Carburetor -
21	501A5	1	†Begin with Spec F.
22	502-2	1	Prior to Spec F (Housed Plants only).
23		1	Prior to Spec F (Unhoused Plants only).
24		1	▲Valve, Solenoid - Reservoir Tank - Begin Serial #643150.
25		1	▲Nipple, Hex - Solenoid Valve to Tank - Begin Serial #643150.
26		1	Line, Fuel Return - Flexible - Begin Serial #643150.
27		1	Elbow, Inverted Male - Fuel Return Line to Restricted fitting - Begin Serial #643150.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 14 - MAGNETO IGNITION GROUP (PRIOR TO SPEC E)

NOTE: Beginning with Spec "B" models, Magneto was changed from Wico (using separate shielding) to Fairbanks Morse (with shielding integral).

1	162P225	1	Magneto - Parts Key Nos. 1 through 5 (Spec A only) WICO #XVD-2299 (For complete replacement use #161-162).
2	161-162	1	Parts Key Nos. 1 through 5 (Begin Spec B) Fairbanks Morse #XVE4C69A (Excludes Stop Stud Assembly) Note: Also used on Parts Key No. 6 (For components, see separate group).
3	162B210	1	Shield Assembly, Magneto Suppression - Parts Key Nos. 1 through 5 (Spec A only).
4	167A41	4	Shield Assembly, Spark Plug.
5			Lead, Magneto Stop - Housed Plants.
	336A981	1	Unhoused Plants.
	336A91	1	Lead, High Temperature Cut off to Magneto (Optional on Unhoused Units).
6	336A980	1	Plug, Spark - Champion 6MJ.
7	167-34	4	Lead, Spark Plug - Shielded - 19".
8	167A1131	4	Clamp, Magneto Mounting.
9	166A103	1	Cable, Ground.
10	336A476	1	Point Set, WICO Magneto - Parts Key Nos. 1 through 5 (Spec A only).
11	(WCE)X6942	1	Condenser, WICO Magneto (WCE)X6916 - Parts Key Nos. 1 through 5 (Spec A only).
12	162-227	1	Rotor, WICO Magneto Distributing - Parts Key Nos. 1 through 5 (Spec A only).
13	(WCE)X5531	1	Cap, WICO Magneto Distributing - Parts Key Nos. 1 through 5 (Spec A only).
14	(WCE)X5981	1	Gasket, WICO Distributing Cap - Parts Key Nos. 1 through 5 (Spec A only).
15	(WCE)6081	1	Felt, WICO Magneto Cam Wiper - Parts Key Nos. 1 through 5 (Spec A only).
16	(WCE)5077	1	Stud Assembly, Fairbanks Morse Magneto Stop - Includes parts marked * - Parts Key Nos. 1 through 5 Begin Spec B (also Parts Key No. 6).
17	161A183	1	*Insulator, Stop Stud to Magneto (FBM)A1166 - Parts Key Nos. 1 through 5 Begin Spec B (also Parts Key No. 6).
18	161A12	1	*Washer, Insulating - Stop Stud Knurled Nut - Parts Key Nos. 1 through 5 Begin Spec B (Also Parts Key No. 6).
19	508-15	2	*Nut, Knurled Female - Stop Stud Securing (FBM)B2735A (Also included in Magneto Assembly) Parts Key Nos. 1 through 5 Begin Spec B (Also Parts Key No. 6).
20	161P164	1	

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 15 - BATTERY IGNITION GROUP (BEGIN SPEC E)			
1	166B4	1	Distributor.
2	160A186	1	Clamp, Distributor Adjusting.
3			Coil, Ignition -
	166B278	1	Parts Key Nos. 1 through 5 (12 Volt) - Replaces 166P259.
	166B268	1	Parts Key No. 6 (6 Volt).
4	167-129	4	Plug, Spark.
5	314P32	4	Suppressor, Spark Plug - Parts Key Nos. 1 through 5 (Parts Key No. 6 Use #314-156).
6			Cable, High Tension - Does not include suppressor -
	167A1070	4	Distributor to Spark Plugs (13-1/4").
	167A1316	1	Coil to Suppressor (7-1/4").
6A	167A1312	1	Distributor to Suppressor (3").
7	314-6	1	Suppressor, Coil to Distributor.
8	312A58	1	Condenser, Coil - Suppression - Replaces 312A15.
9	166P235	1	Cap, Distributor.
10	166P234	1	Rotor, Distributor.
11	166P245	1	Point Set, Contact - Distributor.
12	166B279	1	Clamp, Coil - Replaces 166-101.
14			Lead -
	336A337	1	Distributor to Coil - Parts Key No. 6 (11") Also used on Parts Key Nos. 1 through 5 Prior Spec F.
	336A332	1	Distributor to Coil - Parts Key Nos. 1 through 5 Begin Spec F (5-1/4").
	336A980	1	High Water Temperature Cut Off to Coil (Optional on Unhoused Units) 18-1/2" with shielding and 4 terminals.
	312A10	1	Condenser, Distributor - Ignition.

FIG. 16 - FAIRBANKS MORSE MAGNETO PARTS GROUP

NOTE: These parts DO NOT apply for WICO Magneto.

1	161-162	1	Magneto Assembly, Fairbanks Morse - Vertically Mounted, Offset Forked Coupling Driven, Integrally Shielded, and Impulse Coupling (FBM)#FM-XVE4C69A.
	161-165	1	Block, Magneto Distributing - (FBM)C2474E.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 16 - FAIRBANKS MORSE MAGNETO PARTS GROUP (Cont.)			
2	(FBM)8S8D	4	Screw, Distributing Block - #8-32 x 1/2".
3	(FBM)A983B	1	Lead and Suppressor Assembly, High Tension.
4	(FBM)C6120	1	Clip, Magneto Coil.
	(FBM)C2430A	1	Cap, End - Includes (2) Vent Hoods and Screens.
	(FBM)10S8D	2	Screw, End Cap.
	161-120	2	Screw, End Cap - (FBM)10S10D.
5	(FBM)B6340	1	Seal, Bearing Support Felt.
6	161A42	1	Gasket, End Cap to Frame (FBM)K2498.
7	(FBM)GZ2425	1	Frame, Magneto.
8	(FBM)JS2477C	1	Coil, Magneto - Replaces (FBM)H2477C.
	(FBM)6S3N	1	Screw, Coil Clip - #6-32 x 3/16".
	161-47	1	Washer, Lock - Magneto Coil Clip Screw - #6 - (FBM)6LW1.
9	815-85	2	Setscrew, Magneto Coil Bridge - (FBM)25SS12A.
10	161P71	1	Bearing, Ball - Magnetic Rotor Drive End - (FBM)B5949.
11	161-34	1	Washer, Rotor Shaft Seal - Inner (FBM)C2492.
12	161-128	1	Washer, Rotor Shaft Seal - Outer (FBM)A2492A.
13	161-122	1	Disc, Oil Slinger Baffle - (FBM)E2303.
14	(FBM)E5963	2	Spring, Impulse Coupling Pawl.
15	(FBM)YY2563	1	Hub, Impulse Coupling - Includes E5963 Springs.
16	161-51	1	Spring, Impulse Coupling Drive - (FBM)D2565.
17	161-94	1	Washer, Lock - Impulse Coupling Nut - (FBM)A5931B.
18	(FBM)B5950	2	Bearing, Drive.
19	(FBM)F2624	1	Shaft Assembly, Drive.
20	(FBM)D2671	1	Housing and Bearing Assembly, Drive.
	(FBM)D2671C	1	Housing and Shaft Assembly, Drive.
21	(FBM)25S8G	4	Screw, Drive Housing - 1/4-20 x 1/2".
22	(FBM)D2569	1	Washer, Drive Shaft Thrust.
23	(FBM)L1515	1	Drive Member.
24	(FBM)D5931D	1	Pin, Drive.
25	(FBM)K2570	1	Nut, Impulse Coupling.
	161-133	1	Key, Rotor to Impulse Coupling (FBM)3K1.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 16 - FAIRBANKS MORSE MAGNETO PARTS GROUP (Cont.)			
26	(FBM)QZ2563C	1	Coupling Assembly, Impulse - Includes YY2563 Hub, D2565 Spring and GY5957 Shell.
27	(FBM)GY5957	1	Shell, Impulse Coupling.
28	(FBM)S2568	1	Pin, Stop - Impulse Coupling Pawl.
29	161-62	1	Seal, Magnetic Rotor Shaft - (FBM)G3861.
30	(FBM)A6304	1	Seal, Bearing Oil.
31	161-56	1	Shim, Magnetic Rotor Shaft - (FBM)C2723.
32	(FBM)D2492	1	Washer, Spacer - Ball Bearing to Seal - (Opposite Drive End).
33	(FBM)PW2480	1	Rotor Assembly, Magnetic.
34	(FBM)E6304A	1	Seal, Magnetic Rotor Bearing.
35	(FBM)C5949A	1	Bearing, Ball - Rotor (Opposite Drive End).
36	(FBM)A2636	1	Plate, End Cap.
	(FBM)10S9G	2	Screw, End Cap - Plate - #10-24 x 3/8".
37	161-16	1	Guide, Primary Ground Strip - (FBM)B1355.
	812-63	1	Screw, Primary Ground - #6-32 x 1/2" (FBM)6S8N.
	161-46	1	Nut, Primary Ground - #6-32 - (FBM)6N1.
	(FBM)6LW1	1	Washer, Lock - Primary Ground.
38	(FBM)H2457A	1	Bushing, Primary Ground Insulating.
39	161-37	2	Washer - (1) Contact Support Locking Screw Plate, (1) Primary Ground - (FBM)D2458.
40	(FBM)U2514	1	Strip, Primary Ground.
	161A183	x	Stud Assembly, Magneto Stop - REFER TO IGNITION GROUP.
44	161P164	1	Nut, Knurled - Available also as part of Stop Stud Assembly.
46	(FBM)B1232	2	Hood, Vent.
	(FBM)6S6N	2	Screw, Hood Vent - #6-32 x 3/8".
47	161-81	2	Screen, Vent - (FBM)A6032A.
48	161-38	1	Brush and Spring Assembly - (FBM)E2460B.
49	161-60	1	Rotor, Distributing - (FBM)M2765.
50	(FBM)B3937	4	Terminal, High Tension Cable - Part of Cable Assembly.
51	161P182	1	Condenser, Magneto Ignition - (FBM)M2433.
	(FBM)8S6D	1	Screw, Condenser Mounting - #8-32 x 3/8".
52	(FBM)B1488G	1	Ring, Snap- Fulcrum Pin.
53	(FBM)F2788	1	Wick and Holder Assembly, Cam Felt.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 16 - FAIRBANKS MORSE MAGNETO PARTS GROUP (Cont.)

54	526-3	1	Washer, Contact Support Locking Screw - (FBM)B5969.
55	161-66	1	Terminal, Lead Wire - For #8 Screw - (FBM)A4361.
56	161-166	1	Point Set, Ignition Contact - Fairbanks Morse Magneto (FBM)A2437A.
	(FBM)6S5N	1	Screw, Breaker Arm Terminal - #6-32 x 5/16".
	161-116	1	Washer, Lock - Breaker Arm Terminal Screw - #6 - (FBM)6LW2.
	(FBM)6S6N	1	Screw, Contact Support Locking - #6-32 x 3/8".
	161-116	1	Washer, Lock - Contact Support Locking Screw - #6 - (FBM)6LW2.
	(FBM)8S6N	1	Screw, Contact Support Locking - #8-32 x 3/8".
	850-25	1	Washer, Lock - Contact Support Locking - (FBM)8LW3.
57	(FBM)L2788	1	Wick, Felt - Breaker Arm.
58	(FBM)U4631	1	Support, Bearing.
	(FBM)8S6D	4	Screw, Bearing Support - #8-32 x 3/8".
	167A57	4	Nut, Coupling - Spark Plug Cable to Magneto.

FIG. 17 - COOLING SYSTEM AND MOUNTING CUSHION GROUP

1			Radiator -
	130-285	1	Parts Key Nos. 1 through 5.
	130C344	1	Parts Key No. 6.
2			Cap, Radiator -
	130-290	1	Parts Key Nos. 1 through 5 Prior to Spec F.
	130C553	1	Parts Key Nos. 1 through 5 Begin Spec F - Replaces 130P401.
	130C553	1	Parts Key No. 6 - Replaces 130P364.
2A	130-245	1	Gasket, Radiator Cap - Parts Key No. 6 (and Parts Key Nos. 1 through 5 Begin Spec F).
3	503B203	1	Hose, Radiator - Upper - 1-1/2" I.D. - Inlet.
4	503B204	1	Hose, Radiator - Lower - 1-1/2" I.D. - Outlet.
5	511-20	1	Belt, Fan - 46-1/2".
6			Clamp, Radiator Hose -
	503-11	4	Parts Key No. 6 (Also Parts Key Nos. 1 through 5 Prior to Spec F).
	503-129	4	Parts Key Nos. 1 through 5 Begin Spec F.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
7	130B343	1	Fan Only, Cooling - 4 Blades, Pusher Type.
8			Valve, Drain - Radiator -
	504-6	1	Parts Key No. 6 (Also Parts Key Nos. 1 through 5 Prior to Spec F).
	504-3	1	Parts Key Nos. 1 through 5 Begin Spec F.
9	130A11	1	Pad, Radiator Mounting - Parts Key No. 6 (Also Parts Key Nos. 1 through 5 Prior to Spec F).
10			Bushing, Reducer - Drain Valve -
	505-7	1	Parts Key No. 6 (Also Parts Key Nos. 1 through 5 Prior to Spec F) 1/4 to 1/8" Pipe.
	505-18	1	Parts Key Nos. 1 through 5 Begin Spec F (1/2 to 1/4" Pipe).
11	402-27	2	Mount, Rubber - Generator.
12	402A68	1	Pin, Engine Mounting - 4-3/8" Long with 5/8-18 Thread.
	870-59	1	Nut, Castellated - 5/8-18 Thread.
13	402-10	1	Mount, Rubber - Upper.
14	402-11	1	Mount, Rubber - Lower.
15	402-12	1	Cup, Rubber Mount Retainer.
	(CO)C400B-229	2	Washer, Plain - 11/16, 3/32 Thick - Lower Mounting Rubber.
	(CO)X-4584	1	Stud, 5/8-18 x 4-3/8" Long (Drilled) Gear Cover to Front Motor Support.
	(CO)X-18066	1	Nut, 5/8-18 x 5/8 High (Slotted) Gear Cover to Front Motor Support.
	(CO)X-14191	2	Washer, Plain - 5/8 x 2-1/4 x 1/8" - Gear Cover to Upper Mount.
	(CO)X-607	1	Pin, Cotter - 1/8 x 1-1/2" Long - Gear Cover to Front Motor Support Stud.
	(CO)F162E-5011	1	▲Manifold, Engine Exhaust - Water Cooled.
	504-19	1	▲Valve, Water - Lockshield.
	504-20	1	▲Key, Water Valve.
	110A526	2	▲Bracket and Nipple Assembly (1) Water Inlet, (1) Water Outlet.
	307-182	1	▲Valve, Solenoid Water - 12 Volt.
	110A528	1	▲Bracket, Manifold Water Pipe.
	504-11	1	▲Valve, Water By-Pass Regulator.
	110A522	2	▲Plug, Adapter (1) Water Pump Hose, (1) Water Outlet Hose.

FIG. 17 - COOLING SYSTEM AND MOUNTING CUSHION GROUP (Cont.)

▲ - These optional parts are used only with certain plants which are adapted to cooling by passing fresh water (city water) through the engine as necessary when ventilation is inadequate. Pipe fittings, hose and clamps which are usually available locally are not listed. Consult your dealer if conversion to City Water Cooling is desired.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 18 - STARTING MOTOR AND BATTERY CHARGE GENERATOR GROUP			
1			Motor Starting -
			Parts Key Nos. 1 through 5
	191B7	1	Prior to Spec "G" (Autolite #MAY-4147) 12 Volt - Includes Start Solenoid (AL) SS-4204.
	191C314	1	Begin Spec "G" (Autolite #EO-16582) 12 Volt - Does not include Start Solenoid Relay.
2	191P86	1	Parts Key No. 6 (Autolite #MZ-4178) 6 Volt - Includes Start Solenoid (AL) SS-4001C.
			Adapter, Starter Spacing -
	191A78	1	Parts Key Nos. 1 through 5.
3	191A76	1	Parts Key No. 6.
			Generator, Battery Charging -
			Parts Key Nos. 1 through 5
	191C8	1	Prior to Spec "G" (Autolite #GEF-4806) 12 Volt (Does not include Pulley).
	191C315	1	Begin Spec "G" (Autolite #GJO-71025) 12 Volt (Does not include Pulley).
3A	191P85	1	Parts Key No. 6 (Autolite #GHD-6001-Q1) 6 Volt (Includes Regulator and Pulley).
			Pulley, Charge Generator - Parts Key Nos. 1 through 5.
	191P11	1	Prior to Spec "G".
	191A317	1	Begin Spec "G" (Autolite #SP-1949).
4	(CO)F400M-301	1	Bracket, Generator Mounting.
5	232A230	1	Arm, Generator Belt Adjusting.
6	232A234	1	Spacer, Generator Mounting.
7			Regulator, Charge -
			Parts Key Nos. 1 through 5.
	191-21	1	Prior to Spec "G" (Autolite #VRS-4010A) 12 Volt.
	191B316	1	Begin Spec "G" (Autolite #VBO-6201B-1) 12 Volt.
	191P118	1	Parts Key No. 6 (Autolite #VRR-4104A) 6 Volt (Included with #191P85).
8	331A29	1	Clamp, Pipe - Mounting Hand Crank.
9			Cable, Battery Jumper - Parts Key Nos. 1 through 5 - Select length required -
	416A1	1	5" Long.
	416A4	1	6-3/4" Long.
10			Cable, Battery Positive and Negative - Parts Key Nos. 1 through 6 - Select length required -
	416A49	As Req.	14" Long.
	416A21	As Req.	20-1/2" Long.
	416A77	As Req.	28" Long (Replaces 24" Cable).
	416A37	As Req.	48" Long.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 18 - STARTING MOTOR AND BATTERY CHARGE GENERATOR GROUP (Cont.)			
11	192B4	1	Crank, Engine Hand.
12	191P293	1	Relay, Start Solenoid - Begin Spec "G" Parts Key Nos. 1 through 5 (Delco #1116963).
13	307A546	1	Bracket, Start Solenoid Relay Mounting.
	(CO)X-19002	5	Stud, Charge Generator Bracket to Crankcase (3/8-16 x 1-1/4").
	(CO)X-1802-G	6	Nut, Charge Generator Bracket to Crankcase (3/8" - 16).
	191-16	1	Brush Set, Charging Generator - Parts Key Nos. 1 through 5.
	(AL)GBW-45	2	Spring, Brush - Charging Generator - Parts Key Nos. 1 through 5.
	191-17	1	Brush Set, Starting Motor (AL) MAY-2012AS - Parts Key Nos. 1 through 5.
	(AL)MZ-19	4	Spring, Brush - Starting Motor - Parts Key Nos. 1 through 5.
	312A15	2	Condenser - 0.1 Mfd. - Suppression - (1) Charge Generator to Ground, (1) Charge Regulator to Ground (Begin Spec E).
FIG. 19 - HOUSING GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F)			
1	403D121	1	Chassis, Mounting.
2	405C237	1	Panel, Chassis Rear End.
			Grille, Ventilating -
3	405B321	3	(1) Front, (1) Rear, and (1) Left Hand Front (Carburetor) Side.
4	405B293	2	(1) Left Rear, and (1) Right Rear.
4A	405B745	1	(1) Right Hand Front (Opposite Carburetor) Side.
5	405C236	1	Support, Battery and Fuel Tank.
			Panel -
6	405C234	1	Front End (Radiator Grille).
7	405C240	1	Rear End - Includes Door.
8	405D916	1	Right Door - Includes Handles.
8	405D376	1	Left Door - Includes Handles.
9	405C375	1	Housing Top.
10	405C148	2	Casting, Top End.
11	405C211	2	Cover, Top End Casting.
12	406A45	2	Clip, Latch - Top End Casting Cover.
			Knob -
13	406-2	2	Top End Casting Cover (attaches with machine screws).
14	406-90	1	Panel Door (attach with #12A x 1-1/2" S.M.S.) Use #406-2 Knob.
15	406-88	1	Catch, Panel Door (Use only with #406-90 Knob).
16	416B282	1	Tray, Battery.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 19 - HOUSING GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F) Cont.			
17	416B281	1	Frame, Battery Hold Down.
18	520A459	2	Stud, Battery Hold Down.
19	416A239	2	Spacer, Battery Tray Runner.
20	416A290	1	Rod, Battery Tray Guide.
21	406A9	4	Handle, Door Panel.
22	405C714	1	Support, Engine Mounting.
23	130C402	1	Guard, Fan - 1 Piece (Replaces 2 piece guards used previously).
24	232C934	1	Duct, Air - Generator Exhaust.
25	130B121	1	Plate, Muffler Baffle.
26	305B139	1	Bracket, Regohm AC Voltage Regulator Mounting.
27	159A158	1	Cover, Fuel Tank Neck Hole (Used only on Plants that DO NOT have mounted tank).
28	406A28	6	Bar, Slide -
	406A27	1	(3) Left Panel, (3) Right Panel.
	406A26	1	Left Panel.
29			Right Panel.
	406A13	1	Plate, Pivot - Slide Bars -
	406A15	1	Left Panel - Rear.
	406A14	1	Left Panel - Front.
	406A16	1	Right Panel - Rear.
30	405A249	4	Right Panel - Front.
			Spring, Pivot Plate.

FIG. 19A - HOUSING GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F)

1	403D476	1	Chassis, Mounting -
2	403D477	1	Front Section.
			Rear Section.
3	405D1079	1	Panel -
4	405D1080	1	Front End (Radiator Grille).
5	405D1081	1	Rear Door.
6	405D1082	1	Rear End - Does NOT include door.
7	405D1084	2	Housing Top.
			Housing Side - Includes hold down fasteners.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 19A - HOUSING GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F) Cont.			
8	130B396	1	Support, Radiator Mounting.
9	130E397	2	Bracket, Radiator.
10	232B1345	2	Spacer, Generator Mounting.
11	130C402	1	Guard, Fan - 1 Piece.
12	336A476	1	Cable, Ground Strap.
13	406-2	1	Knob, Rear Door Panel.
14	416B407	1	Tray, Battery.
15	416B406	1	Frame, Battery Hold-Down.
16	520A435	2	Stud, Battery Hold-Down Frame.
17	403A373	1	Plate, Chassis - 9-1/2 x 9" - For mounting load wire conduit.
18	405A1181	2	Stop, Door - Begin Serial No. 613326.

FIG. 19B - HOUSING GROUP - DC MAGNET USE PLANTS (PARTS KEY NO. 6)

1	403D317	1	Base, Mounting.
2	403D318	1	Channel, Rear Base.
3			Support, Battery and Fuel Tank -
	159D483	1	15,000 Watt Plants (15HQ-150R/).
	159D484	1	10,000 Watt Plants (10HQ-150R/).
4	416B335	1	Frame, Battery Hold-Down.
5	520A438	2	Stud, Battery Hold-Down Frame.
			Panel -
6	405B962	2	Side Door.
7	405D907	1	Front End.
8	405B913	1	Housing Top.
9	405D908	1	Rear End.
10	130C402	1	Guard, Fan - 1 Piece (Replaces 2 piece guards used previously).
			Bracket, Radiator Support -
11	130B346	1	Lower.
12	130A345	2	Upper.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 19B - HOUSING GROUP - DC MAGNET USE PLANTS (PARTS KEY NO. 6) NOT ILLUSTRATED (Cont.)			
13	405B911	1	Plate, Rear End Housing.
14	508P60	1	Grommet, Rubber - Battery Cable Hole in Base.
15	159A322	1	Plug, Housing Crank Hole.
16	406A105	4	Fastener, Housing Hold-Down.
	870-106	As Req.	Nut, Tinnerman Speed - "J" Type.
17	330A39	1	Cover, Generator Output Leads (Fastens to Mounting Base).

FIG. 20 - MOUNTING GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F)

1	405C492	1	Casting, Radiator Top. Panel -
2	130C264	1	Radiator Left Side (Carburetor Side).
3	130C265	1	Radiator Right Side.
4	405C772	1	Left Side Mounting.
5	405C777	1	Right Side Mounting.
6	405C780	1	Lower Front.
7	405C781	1	Grille, Radiator Front. Guard, Fan -
8	130C266	1	Left Side.
9	130C267	1	Right Side.
			Support -
10	405C496	1	Radiator Mounting.
11	405C499	1	Engine Mounting.
12	405C500	1	Generator Mounting.
13	405C491	1	Cover, Radiator Fill.
14	232C934	1	Duct, Air - Generator Adapter.
15	336A476	1	Cable, Ground Strap.
16	406-2	1	Knob, Radiator Fill Cover.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 20A - MOUNTING GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F)			
1	403D476	1	Chassis, Mounting. Trim -
2	403C478	1	Right Side Chassis.
3	403C479	1	Left Side Chassis.
4	405D1089	1	Front End Panel.
5	405D1079	1	Panel, Front End.
6	130B396	1	Support, Radiator Mounting.
7	130A397	2	Bracket, Radiator.
8	232B1345	2	Spacer, Generator Mounting.
9	130C402	1	Guard, Fan - 1 Piece.
10	336A476	1	Cable, Ground Strap.
11	416B407	1	Tray, Battery.
12	416B406	1	Frame, Battery Hold-Down.
13	520A435	2	Stud, Battery Hold-Down Frame.

FIG. 21 - VOLTAGE REGULATOR GROUP (12 VOLT CRANKED PLANTS) - PARTS KEY NOS. 1 THROUGH 5

1	305P59	1	Plug-In Unit, Voltage Regulator.
2	303-64	1	Rheostat, Voltage Regulator - Model "H" - Prior to Spec E (500 Ohm).
	303-65	1	Begin Spec E (250 Ohm).
3	303-32	1	Knob, Rheostat.
4	305C137	1	Base Assembly, Regulator.
5	312A58	1	Condenser, Suppression - 0.1 Mfd - Replaces 312A15.
	305A144	4	Spacer, Regulator Mounting.
	508-31	4	Grommet, Rubber - Regulator Mounting.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 22 - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F)

NOTE: Voltage Regulator appears in separate group.

1	301C981	1	Panel Only - Engine Control Half -
	301C1455	1	Prior to Spec E.
2			Spec E Only.
	301C884 mod.	1	Panel Only - AC Meter Half -
2A	301C884	1	Parts Key No. 1 Prior to Spec D (115 Volt only).
	301C1391	1	Parts Key No. 1 Prior to Spec D (except 115 Volt).
	301C1377	1	Parts Key No. 1 - Spec D and E (115 Volt only).
	301C934	1	Parts Key No. 1 - Spec D and E (except 115 Volt).
	301C1376	1	Parts Key Nos. 2 through 5 Prior to Spec D.
3	322-5	1	Parts Key Nos. 2 through 5 - Spec D and E.
	193B35	1	Receptacle, Panel Light.
4	193B35	1	Gauge, Engine Oil Pressure - Panel Unit - Includes Clamp.
	193B36	1	Gauge, Water Temperature - Panel Unit - Includes Clamp.
5			Voltmeter - AC (Select according to rating) -
	302P420	1	0-150 - Replaces 302-40.
6	302P421		0-300 - Replaces 302-41.
	302P422		0-500 - Replaces 302-42.
7		As Req.	Ammeter - AC (Select according to rating) -
	302P502		0-20 - Replaces 302-144.
8	302-159		0-25.
	302P404		0-35 - Replaces 302-124.
9	302P405		0-50 - Replaces 302-116.
	302P406		0-75 - Replaces 302-9.
10	302P408		0-100 - Replaces 302-11.
	302P409		0-140 - Replaces 302-126.
8	302P411		0-200 - Replaces 302B13.
	302P60	1	Ammeter, Charge (20-0-20).
9	193A11	1	Gauge, Fuel - Panel Unit (Listed also in Mounted Fuel Tank Group).
	193P30	1	Divider, Voltage.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22 - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F) (Cont.)			
11	308-90	1	Switch, Start-Stop (Not used on some early Spec "A" plants) - Use 308A166.
11A	308-9	1	Switch, Start-Stop (Used only on some early Spec "A" plants).
11B	308A166	1	Switch, Start-Stop - Replaces 308-90.
12	301A974	1	Bracket, Start-Stop Switch Mounting (Used only with 308-90 switch).
13			Breaker, Circuit - 5 Amp -
	320-54	1	Parts Key Nos. 2 through 5 Prior to Spec D (Three pole, WESTINGHOUSE).
	320-55	1	Parts Key No. 1 Prior to Spec D (Two pole, WESTINGHOUSE).
	320B97	1	Parts Key Nos. 2 through 5 Spec D and E (Three pole, rear connected, HEINEMANN).
	320B96	1	Parts Key No. 1 Spec D and E (Two pole, rear connected, HEINEMANN).
14			Switch, Toggle -
	308B68	1	Spec B plants Prior to Serial #503547 (Regulator On-Rheostat On).
	308B68	1	Prior to Spec E (Hand Crank - Remote).
	308P5	1	Begin Spec E (Hand Crank - Remote) Replaces #308P6.
15	308-2	1	Switch, Panel Light.
16	301A413	4	Spacer, Circuit Breaker Mounting (5/16 x 3/4" Long Brass Tubing) Prior to Spec D.
17	308-22	1	Switch, Meter Selector - Parts Key Nos. 2 through 5.
18			Harness Assembly, Wiring -
			Engine to Control Connections -
	338C103	1	Prior to Spec E.
	338C169	1	Spec E Only.
			Remote Terminal Connections -
	338A33	1	Prior to Spec E.
	338A186	1	Spec E Only.
	338B104	1	Rheostat Connections.
	338B105	1	Charge Generator Connections.
	338B136	1	Exciter to Control Connections - Spec E Only.
19			Resistor, Fixed -
			As used in Stop Relay Circuit:
	304A121	1	Prior to Spec E (10 Ohm).
	304P32	1	Spec E Only (15 Ohm).
			As used with Optional Running Time Meter:
	304-99	1	Parts Key Nos. 1, 2, 3 and 5 (5000 Ohm).
	304-125	1	Parts Key No. 4 (15000 Ohm).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22 - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F) Cont.			
20	332-49	1	Clip, Tinnerman -
	332P51	1	Harness & Starter Cable Fastening.
	332-50	1	Harness To Battery Rack Fastening.
21	307B116	1	Magneto Stop Lead to Battery Rack Fastening (Prior to Spec E Only).
	307B4	1	Relay, Stop -
			Prior to Spec E.
22			Spec E only.
	332-54	1	Block, Terminal - 8 Place -
	332A503	1	Prior to Spec E.
	332A510	1	Spec E Only.
23			Strip, Block Marker - 8 Place (Marked 4, 5, 6, 7, 8, 9, 10, 11).
24		As Req.	Transformer, Current (Check Current Transformer Nameplate for rating) -
	302B145		20/5 Ratio - Prior to Spec D (Use with 0-20 AC Ammeter).
	302B340		25/5 Ratio - Spec D and E (Use with 0-20 AC Ammeter).
	302B160		25/5 Ratio - Prior to Spec D (Use with 0-25 AC Ammeter).
	302B247		25/5 Ratio - Spec D and E (Use with 0-25 AC Ammeter).
	302B123		35/5 Ratio - Prior to Spec D (Use with 0-35 AC Ammeter).
	302B255		35/5 Ratio - Spec D and E (Use with 0-35 AC Ammeter).
	302B117		50/5 Ratio - Prior to Spec D (Use with 0-50 AC Ammeter).
	302B246		50/5 Ratio - Spec D and E (Use with 0-50 AC Ammeter).
	302B76		75/5 Ratio - Prior to Spec D (Use with 0-75 AC Ammeter).
	302B245		75/5 Ratio - Spec D and E (Use with 0-75 AC Ammeter).
	302B78		100/5 Ratio - Spec A through Spec E (Use with 0-100 AC Ammeter).
	302B125		140/5 Ratio - Prior to Spec D (Use with 0-140 AC Ammeter).
	302B243		140/5 Ratio - Spec D and E (Use with 0-140 AC Ammeter).
24A	302B106		200/5 Ratio - Spec A thru Spec E (Use with 0-200 Ammeter).
			Transformer, Potential - Adapts AC Voltage Regulator -
	315B2	1	Parts Key No. 1 (115 Volt Plants only).
	315B20	1	Parts Key No. 4.
	315B21	1	Parts Key No. 5.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22 - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F) Cont.			
25			Meter, Running Time - OPTIONAL EQUIPMENT -
	302-212	1	60 Cycle Plants (Replaces #302P68).
	302-102	1	50 Cycle Plants.
26	301C446	1	Panel, Running Time Meter Mounting - Plants with OPTIONAL Meter (Mounts to Housing Rear End Cover).
27	322-4	1	Lamp, Pilot Light - 12 Volt.
28	332A19	As Req.	Stud, Output Terminal - Insulated (3/8-16 x 3-1/4").
29	332A56	1	Stud, Output Terminal - Grounded (3/8-16 x 2-1/2").
30	332A21	As Req.	Block, Output Terminal.
31	332A23	As Req.	Bushing, Adapter - Output Terminal Block.
32	332A230	As Req.	Terminal, Output Stud - Solderless.
33	312A58	2	Condenser - Output Terminal Suppression - 0.1 Mfd -
	315A58	3	Parts Key No. 1 (Note: 115 Volt Plants use quantity of 1) - (Replaces 312A15.
34	312A22	3	Parts Key Nos. 2 - Spec E Only.
35	304-74	1	Parts Key Nos. 3 through 5 (Note: Also used on Parts Key No. 2 Prior to Spec E).
36	304B97	1	Resistor Only, Field Discharge - 2200 Ohm.
37	307B52	1	Resistor Assembly, Global Field Discharge - Includes Ref. 35 plus Bracket.
38	193A37	1	Relay, Start-Disconnect (Note: 1 also used for Start Relay Prior to Spec E).
39	193B38	1	Sender, Water Temperature Gauge - Engine Sending Unit only.
40	309-9	1	Sender, Oil Pressure Gauge - Engine Sending Unit only.
40A	309-146	1	Switch, High Water Temperature Cut-off - Use 309-146.
41	309B10	1	Switch, High Water Temperature Cut-off - Not Adjustable - Replaces 309-9.
42	308A165	1	Switch, Low Oil Pressure Cut-off - OPTIONAL EQUIPMENT.
43			Switch, Remote Control Start and Stop (Replaces #308-40 and 308A94).
	332A18	2	Block, Terminal - 4 Place -
	332A391	2	Prior to Spec E - (1) Engine Control Panel, (1) AC Meter Panel.
43A			Spec E Only - (1) Engine Control Panel, (1) AC Meter Panel.
	332A574	1	Strip, Block Marker - 4 Place - Spec E Only -
	332A447	1	AC Meter Panel (Marked 2, 3, 4, 5).
44	332A188	1	Engine Control Panel (Marked B+, 1, 2, 3).
45	302A153	2	Block, Terminal - 3 Place - Parts Key No. 1.
			Spacer, 3 Place Terminal Block Mounting - Parts Key No. 1.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22 - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 PRIOR TO SPEC F) Cont.			
46	303-64	1	Rheostat - Prior to Spec E (500 Ohm, Model "H") Regulator Operation (Listed also in Regulator Group).
47	303-65	1	Spec E Only (250 Ohm, Model "H") Regulator Operation (Listed also in Regulator Group).
47	303-31	1	Spec B Plants Prior to Serial #503547 (300 Ohm, Model "K") For Manual Voltage Control.
48	303P83	1	Begin Spec B Serial #503547 (Includes #308P131 Switch) For Manual Voltage Control.
48	303-32	2	Knob, Rheostat (1) Voltage Regulator Rheostat, (1) Manual Voltage Control Rheostat.
48A	308P131	1	Switch, Manual Voltage Control Rheostat - Begin Spec B Serial #503547 (Part of 303P83 Rheostat).
49			Panel, Transformer Coil Mounting - Bakelite -
	302A108	1	Parts Key No. 1 (8-1/2" x 3 x 1/4").
	302A109	1	Parts Key Nos. 2 through 5 Prior to Spec D (11 x 3 x 1/4").
	302B339	1	Parts Key Nos. 2 through 5 Begin Spec D (11 x 3 x 1/4").
50			Bracket, Transformer Coil Panel Mounting -
	302A127	2	Parts Key No. 1 Prior to Spec D.
	302A337	2	Parts Key No. 1 Begin Spec D.
	302A128	2	Parts Key Nos. 2 through 5 Prior to Spec D.
	302B338	2	Parts Key Nos. 2 through 5 Begin Spec D.
51	302A154	As Req.	Hook, Transformer Coil Mounting.
52	332A56	3	Stud, 3 Place Terminal Block - (3/8-16 x 2-1/2") Parts Key No. 1.
53	301A1061	1	Cover, Manual Field Rheostat Knob - Used Begin Serial #503547 to approximately Nov. 22, 1954.
54	302-157	1	Multiplier, Meter - 58,000 Ohm - Parts Key Nos. 4 and 5.
55	308P37	1	Switch, Momentary Contact - Used during manual cranking to remove Low Oil Pressure Cut-Off Switch from circuit - OPTIONAL.
56	302B448	1	Plate, Meter Face - For appearance only - to give round meter a square look.
FIG. 22A - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F)			
NOTE: Voltage Regulator appears in separate group.			
1			Panel Only, Engine Control Half - Lower.
	301C1608	1	Spec F only.
	301C1916	1	Begin Spec G.
2	301D1106	1	Box Only, Control.
			Panel Only, AC Output Control - Upper -
3	301C1371	1	Parts Key No. 1.
3A	301C1370	1	Parts Key Nos. 2 through 5.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22A - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F) Cont.			
4	322P49	1	Receptacle, Panel Light - Includes Switch.
5	193B107	1	Gauge, Engine Oil Pressure - Panel Unit.
6	193B106	1	Gauge, Water Temperature - Panel Unit.
7	302P420	1	Voltmeter - AC (Select according to rating) -
	302P421		0-150 - Replaces 302-40.
	302P422		0-300 - Replaces 302-41.
			0-500 - Replaces 302-42.
8	302P502	As Req.	Ammeter - AC (Select according to rating -
	302-159		0-20 - Replaces 302-144.
	302P404		0-25.
	302P405		0-35 - Replaces 302-124.
	302P406		0-50 - Replaces 302-116.
	302P408		0-75 - Replaces 302-9.
	302P409		0-100 - Replaces 302-11.
	302P411		0-140 - Replaces 302-126.
	302A61	1	0-200 - Replaces 302-13.
9			Ammeter, Charge (30-0-30) Replaces #302P60 (20-0-20).
10	308-90	1	Switch, Start-Stop -
10A	308P154	1	Spec F Only - Use 308A166.
10B	308A166	1	Begin Spec G.
11	301A974	1	Spec F Only - Replaces 308-90.
12			Bracket, Start-Stop Switch Mounting - Spec F Only - Used only with 308-90 Switch.
	320B96	1	Breaker, Circuit -
	320B97	1	Parts Key No. 1 (Two Pole).
13	308P5	1	Parts Key Nos. 2 through 5 (Three Pole).
14	308-22	1	Switch, Toggle - Handcrank - Remote.
15			Switch, Meter Selector - Parts Key Nos. 2 through 5.
	338C187	1	Harness Assembly, Wiring -
	338B105	1	Engine to Controls Connection.
	338B136	1	Charge Generator Connection.
			Exciter to Control Connection
			Resistor, Fixed -
16	304P32	1	In Stop Relay Circuit (15 Ohm).

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
	FIG. 22A - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F) (Cont.)		
17	304-99	1	As used with OPTIONAL Running Time Meter for Parts Key Nos. 1, 2, 3, and 5 (5000 Ohm).
18	304-125	1	As used with OPTIONAL Running Time Meter for Parts Key No. 4 (15000 Ohm).
	332-51	1	Clip, Tinnerman - Harness to Battery Rack Fastening.
	307B4	1	Relay, Stop.
			Block, Terminal -
19	332A503	1	8 Place - Engine Control Panel.
20	332A537	1	4 Place - Engine Control Panel.
21	332A391	1	4 Place - AC Output Control Panel.
22	332A513	1	Current Transformer Connection - AC Output Control Panel (Specify Phase & Voltage of Model).
			Strip, Terminal Block Marker -
23	332A510	1	For 8 Place Block (Marked 4, 5, 6, 7, 8, 9, 10, 11).
23A	332A566	1	For 4 Place Engine Panel Block (Marked B+, 1, 2, 3).
23B	332A524	1	For 4 Place Output Panel Block (Marked F2, Af, F1, A1).
24		As Req.	Transformer, Current (Check Current Transformer Nameplate for Rating) -
	302B340		20/5 Ratio (Use with 0-20 AC Ammeter).
	302B247		25/5 Ratio (Use with 0-25 AC Ammeter).
	302B255		35/5 Ratio (Use with 0-35 AC Ammeter).
	302B246		50/5 Ratio (Use with 0-50 AC Ammeter).
	302B245		75/5 Ratio (Use with 0-75 AC Ammeter).
	302B78		100/5 Ratio (Use with 0-100 AC Ammeter).
	302B243		140/5 Ratio (Use with 0-140 AC Ammeter).
	302B106		200/5 Ratio (Use with 0-200 AC Ammeter).
25			Meter, Running Time - OPTIONAL EQUIPMENT -
	302-212	1	60 Cycle Plants.
	302-102	1	50 Cycle Plants.
27	322-26	1	Lamp, Pilot Light.
		As Req.	Clamp, Current Transformer Mounting -
28	302A235		Inside of Coil.
28A	302A236		Outside of Coil.
29	312A58	As Req.	Condenser - Output Terminal Suppression - 0.1 Mfd -
30	312A22	4	Parts Key No. 1 and 2 - Replaces 312A15.
			Parts Key Nos. 3, 4 and 5.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22A - CONTROL GROUP - HOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5 BEGIN WITH SPEC F) Cont.			
31	304B97	1	Resistor Assembly, Global Field Discharge - Includes Ref. 32 and 33.
32	304-74	1	Resistor Only, Field Discharge - 2200 Ohm.
33	304A77	1	Bracket, Field Discharge Resistor Mounting.
34	307B52	1	Relay, Start-Disconnect.
35	307B81	1	Relay, Start Ignition.
36	193A109	1	Sender, Water Temperature Gauge - Engine Sending Unit Only.
37	193B108	1	Sender, Oil Pressure Gauge - Engine Sending Unit Only.
38	309-9	1	Switch, High Water Temperature Cut-Off - Adjustable - Use 309-146.
38A	309-146	1	Switch, High Water Temperature Cut-Off - Non-Adjustable - Replaces 309-9.
39	309B10	1	Switch, Low Oil Pressure Cut-Off - OPTIONAL EQUIPMENT.
40	308A165	1	Switch, Remote Control Start and Stop - Replaces 308A94.
41			Rheostat -
	303P83	1	Manual Voltage Control - Includes #308P131 Switch.
	303-65	1	Voltage Regulator Operation (Listed also in Regulator Group).
42	308P131	1	Switch, Manual Voltage Control Rheostat.
43	303-32	2	Knob, Rheostat - (1) Voltage Regulator Rheostat, (1) Manual Voltage Control Rheostat.
44	301A413	4	Spacer, Meter Selector Switch Mounting - Parts Key Nos. 2 through 5.
45	308P37	1	Switch, Momentary Contact - Used during manual cranking to remove Low Oil Pressure Cut-Off Switch from Circuit - OPTIONAL.
46	302-157	1	Multiplier, Meter - 58,000 Ohm - Parts Key Nos. 4 and 5.
47	508P63	1	Grommet, Rubber (2-1/4 x 3-3/8 x 1/4) For 2-3/4" Hole.
48	160A144	As Req.	Jumper, Terminal Block (5/16" Copper Strip).
49	301A648	1	Plate, Grounding - Output Terminal Block.
50			Transformer, Potential - Adapts AC Voltage Regulator -
	315B2	1	Parts Key No. 1 (115 Volt Plants Only).
	315B20	1	Parts Key No. 4.
	315B21	1	Parts Key No. 5.
51	302B448	1	Plate, Meter Face - For appearance only - to give round meter a square look.
FIG. 22B - CONTROL GROUP - DC MAGNET PLANT - PARTS KEY NO. 6			
1	301B1121	1	Bracket, Control Mounting.
2			Panel, Control -
	301A1055	1	Prior to Spec E.
	301A1495	1	Begin with Spec E.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22B - CONTROL GROUP - DC MAGNET PLANT - PARTS KEY NO. 6 (Cont.)			
3	330-11	1	Box, Outlet.
4	308-90	1	Switch, Start-Stop - Prior to Spec E - Use 308A166.
4A	308A166	1	Switch, Start-Stop - Prior to Spec E - Replaces 308-90.
5	301A974	1	Bracket, Start-Stop Switch Mounting - Prior to Spec E - Used only with 308-90 Switch.
6	308A29	1	Switch, Start - Begin with Spec E.
7	302P60	1	Ammeter, Charge (20-0-20).
8	332A406	1	Block, Terminal.
9	332A426	1	Strip, Block Marker.
10			Harness Assembly, Wiring - Engine to Control - Prior to Spec E.
	338B146	1	Begin with Spec E.
	338B184	1	Switch, Ignition - Begin with Spec E.
11	308-69	1	Stud, Control Mounting.
12	520-526	2	Gauge, Oil Pressure.
13	193P6	1	Clip, Tinnerman - Harness to Filter.
14	332-48	1	

FIG. 23 - CONTROL GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5)

NOTE: a - Voltage Regulator appears in separate group.

b - Unhoused Plants with OPTIONAL Meter Panel, see Housed Plants Control Group for parts not listed in this group.

1			Box, Control -
	301D888	1	Prior to Spec C.
	301D1141	1	Spec C and D.
	301D1106	1	Begin Spec E - Parts Key Nos. 1, 2 and 3.
	301D1246	1	Begin Spec E - Parts Key No. 4.
			Panel Only, Control - Upper -
2			Standard - Plant is NOT equipped with AC Output Ammeters - Prior to Spec C (No provision for Voltmeter).
	301C938	1	Spec C and D (With provision for Voltmeter).
	301C1022	1	Begin Spec E - Parts Key Nos. 1, 2 and 3.
	301C1202	1	Begin Spec E - Parts Key No. 4.
	301C1245	1	

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 23 - CONTROL GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5) Cont.

2A	301D937	1	Panel Only, Control - Upper (Cont.) -
	301C1382	1	Optional - Plant 1S equipped with AC Output Ammeters.
	301C1237	1	Parts Key Nos. 2 and 3 Prior to Spec D.
	301C1394	1	Parts Key Nos. 2 and 3 - Spec D only.
	301D987	1	Parts Key Nos. 4 and 5 Prior to Spec D.
2B	301C1393	1	Parts Key Nos. 4 and 5 - Spec D only.
	301C1371	1	Parts Key No. 1 Prior to Spec D.
	301C1370	1	Parts Key No. 1 - Spec D only.
	301C890	1	Parts Key No. 1 Begin Spec E.
	301C1430	1	Parts Key Nos. 2 through 5 Begin Spec E.
3	301C1608	1	Panel, Control - Lower -
	301C1916	1	Prior to Spec E.
	301B925	1	Spec E only.
	301B1145	1	Spec F only.
	301D1124	1	Begin Spec G.
4	301B960	1	Bracket, Control Box Mounting -
	301B1144	1	Left Hand Bracket -
	301D1125	1	Prior to Spec C.
	302A61	1	Spec C and D.
	303-64	1	Begin Spec E.
5	303-65	1	Right Hand Bracket -
	303-31	1	Prior to Spec C.
	303P83	1	Spec C and D.
	303-32	2	Begin Spec E.
			Ammeter, Charge (30-0-30) Replaces #302P60 (20-0-20).
6			Rheostat -
			Prior to Spec E (Voltage Regulator Operation) Listed also in Voltage Regulator Group.
			Begin Spec E (Voltage Regulator Operation) Listed also in Voltage Regulator Group.
			Spec B Plants Prior to Serial #503547 (Field-Manual Control).
			Begin Spec B Serial #503547 (Field-Manual Control) Includes #308P131 Switch.
7			Knob, Rheostat - (1) Regulator Rheostat, (1) Field Rheostat.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 23 - CONTROL GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5) (Cont.)			
8	308-26	1	Switch, Start-Stop -
8A	308-90	1	Spec B Plants Prior to Serial #503547.
8B	308P154	1	Begin Spec B Serial #503547 through Spec F - Use 308A166.
8C	301A974	1	Begin Spec G.
		1	Bracket, Start-Stop Switch Mounting - Begin Spec B Serial #503547 through Spec F - Use only with 308-90 Switch.
8D	308A166	1	Begin Spec B Serial #503547 through Spec F - Replaces 308-90.
9	308-2	1	Switch, Toggle (Hand Crank - Remote) -
	308P5	1	Prior to Spec E.
	308B68	1	Begin Spec E.
10			Switch, Regulator - Rheostat - Spec B Plants Prior to Serial #503547.
11			Relay -
	307B52	1	Start-Disconnect (Note: 1 also used for Start Relay Prior to Spec E).
	307B81	1	Start Ignition - Begin Spec E.
12			Relay, Stop -
	307B116	1	Prior to Spec E.
	307B4	1	Begin Spec E.
13			Resistor, Fixed -
			As used in Stop Relay Circuit:
	304A121	1	Prior to Spec E (10 Ohm).
	304P32	1	Begin Spec E (15 Ohm).
	304-99	1	As used with Optional Running Time Meter:
	304-125	1	Parts Key Nos. 1, 2, 3 and 5 (5000 Ohm).
			Parts Key No. 4 (15,000 Ohm).
14			As Req. Block, Terminal - Select according to description -
	332A503		8 Place - 5-15/32" Long (Begin Spec F).
	332A532		5 Place - 3-25/32" Long (Spec E Only).
	332A391		4 Place - 3-7/32" Long (Prior to Spec F).
	332A537		4 Place - 2-1/2" Long (Begin Spec F).
	332A406		3 Place - 2-11/16" Long (Begin Spec E).
	332A333		2 Place - 2-3/32" Long (Potential Transformer) Parts Key Nos. 4 and 5 Prior to Spec F.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 23 - CONTROL GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5) Cont.			
14A			As Req. Strip, Terminal Block Marker - Select according to description - For 8 Place Block (Marked 4, 5, 6, 7, 8, 9, 10, 11) Begin Spec F. For 5 Place Block (Marked 4, 5, 6, 7, 8) Spec E only. For 4 Place - 3-7/32" Block (Marked B+, 1, 2, 3) Prior to Spec F. For 4 Place - 2-1/2" Block (Marked B+, 1, 2, 3) Begin Spec F. For 4 Place Block (Marked 4, 5, 6, 7) Prior to Spec E. For 3 Place Block (Marked F2, F1-A1-AF, A2) Begin Spec E. †Transformer, Current - OPTIONAL. †Ammeter, AC - OPTIONAL. 1 Voltmeter, AC - Standard Equipment Begin Spec C plants, Optional Equipment Prior Spec C (Select according to rating) - 0-150 - Replaces 302-40. 0-300 - Replaces 302-41. 0-500 - Replaces 302-42. † Breaker, Circuit. †Switch, Meter Selector. †Resistor Assembly, Globar Field Discharge. †Resistor Only, Field Discharge - 2200 Ohm. †Bracket, Field Discharge Resistor. As Req. Stud, Output Terminal - Prior to Spec E - Insulated (3/8-16 x 3-1/4"). Grounded (3/8-16 x 2-1/2"). Block, Output Terminal - Prior to Spec E. As Req. 1 Begin Spec E (13-3/8 x 2-1/2") Specify Number of Output holes. As Req. Bushing, Adapter - Output Terminal Block - Prior to Spec E. Harness Assembly, Wiring - Exciter to Control Connections. Engine to Control Connections - Prior to Spec E. Spec E Only. Begin Spec F. Charge Generator Connections.
15	332A510		
16	332A575		
17	332A447		
	332A566		
	332A448		
	332A530		
18	302P420		
19	302P421		
20	302P422		
20A			
20B			
21	332A19		
	332A56		
22	332A21		
23	332A513		
24	332A23		
25	338B136		
26	338B124		
	338B168		
	338C187		
	338B105		

† - See Note "b" at beginning of this group.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 23 - CONTROL GROUP - UNHOUSED AC PLANTS (PARTS KEY NOS. 1 THROUGH 5) (Cont.)			
27	308A165	1	Switch, Remote Control Start-Stop - Replaces 308A94.
28	193B6	1	Gauge, Oil Pressure -
28A	193B107	1	Prior to Spec F (Mounts on Engine).
29	193B108	1	Begin Spec F (Panel Unit Only).
30	193B109	1	Sender, Oil Pressure Gauge (Engine Sending Unit Only) Begin Spec F.
31	193B110	1	Sender, Water Temperature Gauge (Engine Sending Unit Only) Begin Spec F.
32	309B37	1	Switch, Low Oil Pressure Cut-Off - OPTIONAL Equipment.
33	309A9	1	Switch, Momentary Contact - Plants with Optional Low Oil Pressure Cut-Off Switch.
33A	309A146	1	Switch, High Water Temperature Cut-Off - OPTIONAL Equipment - Adjustable - Use 309A146.
			Switch, High Water Temperature Cut-Off - OPTIONAL Equipment - Non-Adjustable - Replaces 309-9.
34			Transformer, Potential (Adapts AC Voltage Regulator) -
	315B2	1	Parts Key No. 1 (115 Volt Plants Only).
	315B20	1	Parts Key No. 4.
	315B21	1	Parts Key No. 5.
35	193B106	1	Gauge, Water Temperature (Panel Unit only) Begin Spec F.
36	302-157	1	Multiplier, Meter - Parts Key Nos. 4 and 5 (58,000 Ohm).
37	301A1061	1	Cover, Manual Field Rheostat Knob - Used Begin Serial #503547 to approximately Nov. 22, 1954.
			Condenser, Output Terminal Suppression -
38	312A58	As Req.	Parts Key Nos. 1, 2, and 3 (0.1 Mfd) - Replaces 312A15.
	312A17	1	Parts Key Nos. 1, 2 and 3 (0.5 Mfd).
39	312A22	3	Parts Key No. 4 (0.1 Mfd).
40	301B1136	1	Cover, Lead.
			Meter, Running Time - OPTIONAL EQUIPMENT (Illustrated with Housed Group) -
	302-212	1	60 Cycle Plants.
	302-102	1	50 Cycle Plants.
	502-20	1	Elbow, Oil Pressure Gauge Sender - Begin Spec F.
	308P131	1	Switch, Manual Field Rheostat - Begin Serial #503547.
41	302B448	1	Plate, Meter Face - For appearance only - To give round meter square look.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 24 - GENERATOR GROUP - NON REMOVABLE TYPE EXCITER ARMATURE			
Note: This group for Parts Key Nos. 1 through 5 Prior to Spec "C".			
1	★	1	Coil Set, Exciter Field.
2	★	4	Poleshoe, Exciter.
3	232B630	1	Band, End Bell.
4			Cover, Outlet -
	232A746	1	Housed Plants.
	232A1038	1	Unhoused Plants.
5	232B55	1	Cover, Bearing.
6	232B57	1	Gasket, Bearing Cover.
7	232A615	1	Clip, Bearing - Anti-Rotation.
8	211D42	1	Bell, End.
9	212C182	1	Rig Assembly, Brush - Includes Brushes & Springs.
10	★	1	Frame Only, Exciter.
11	★	1	Stator Assembly, Wound.
12	★	1	Rotor Assembly, Wound - Includes Bearing.
13	232B165	1	Scroll, Air.
14	205B33	1	Blower, Air.
15	231D11	1	Adapter, Generator to Engine.
16	★	1	Band, Alternator Frame - Top.
17	510A52	1	Bearing, Ball - Double Sealed, Pre-Lubricated.
18	★	1	Band, Alternator Frame - Bottom.
19	232A619	2	Screen, Air Intake.
20	212B1105	8	Spring, Brush.
21	214A46	4	Brush, Slip Ring.
22	214A44	4	Brush, Commutator.
23	403A95	1	Bolt, Lifting Eye.
24	231D39	1	Adapter, End Bell to Alternator.
25			Condenser -
	315A17	1	Commutator Brush (0.5 Mid).
	312A58	1	Collector Ring Brush (0.1 Mid) - Replaces 312A15.

★ - Order these parts by description and furnish complete information from plant nameplate.

REF. NO. PART NO. QUANT. USED

DESCRIPTION

FIG. 25 - GENERATOR GROUP - REMOVABLE TYPE EXCITER ARMATURE

Note: This group for Parts Key Nos. 1 through 5 Begin Spec C, and for all Parts Key No. 6.

1	231D11	1	Adapter, Generator to Engine -
1A	231E79	1	Parts Key Nos. 1 through 5 Prior to Spec F.
1B	231D64	1	Parts Key Nos. 1 through 5 Begin Spec F.
2	205B33	1	Parts Key No. 6.
3	232B165	1	Blower, Air.
4	★	1	Scroll, Air - Parts Key Nos. 1 through 5.
5	515-130	1	Rotor Assembly, Alternator - Includes Bearing - Parts Key Nos. 1 through 5.
6	★	1	Key, Armature to Rotor Shaft - Parts Key Nos. 1 through 5.
7	510P63	1	Stator Assembly, Wound - Parts Key Nos. 1 through 5.
8	★	1	Bearing, Ball - Alternator Rotor - Parts Key Nos. 1 through 5.
9	★	1	Band, Alternator Frame - Top - Parts Key Nos. 1 through 5.
10	212C194	1	Band, Alternator Frame - Bottom - Parts Key Nos. 1 through 5.
11	232P186	1	Rig Assembly, Brush - Alternator - Parts Key Nos. 1 through 5.
11A	232A1187	1	Anti-Rotation Device, Bearing - Alternator Rotor Bearing - Parts Key Nos. 1 through 5.
12	211E95	1	Spring, Anti-Rotation Device - Parts Key Nos. 1 through 5.
13		1	Bell, Alternator End - Parts Key Nos. 1 through 5.
		1	Coil Set, Field - Set of 4 Coil -
	222A1379	1	Parts Key Nos. 1 through 5 (Exciter).
	222A1395	1	Parts Key No. 6 (10,000 Watt Plants) 10HQ.
	222A1376	1	Parts Key No. 6 (15,000 Watt Plants) 15HQ.
14			Shoe, Pole -
	221A87	4	Parts Key Nos. 1 through 5 (Exciter) 2-1/2" Stack.
	221B104	4	Parts Key No. 6 (10,000 Watt Plant) 10HQ (5" Stack).
14A	221B106	4	Parts Key No. 6 (15,000 Watt Plant) 15HQ (7-1/2" Stack).
			Interpole - Parts Key No. 6 -
	221A107	4	10,000 Watt Plants (10HQ) 3-1/2".
	221A105	4	15,000 Watt Plants (15HQ) 4-1/2".
15			Cover, Hand Hole - Upper Left and Right -
	232B1254	2	Parts Key Nos. 1 through 5 (Alternator End Bell).
	232B1089	2	Parts Key No. 6 (End Bell).

★ - Order these parts by description and furnish complete information from plant nameplate.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 25 - GENERATOR GROUP - REMOVABLE TYPE EXCITER ARMATURE (Cont.)			
16	232A1253	2	Cover, Hand Hole - Screened -
	232B1093	1	Parts Key Nos. 1 through 5 (Alternator End Bell - Lower Left and Right).
	232B1162	1	Parts Key No. 6 (End Bell - Lower Right).
16A	234B20	1	Parts Key No. 6 (End Bell - Lower Left).
17	201A623	1	Cover, Outlet Lead - Parts Key Nos. 1 through 5 (Alternator End Bell-Top).
	201A666	1	Armature Assembly -
	201A667	1	Parts Key Nos. 1 through 5 (60 Cycle Plants).
17A	201A630	1	Parts Key Nos. 1 through 5 (50 Cycle Plants).
	510A52	1	Parts Key No. 6 (10, 000 Watt Plants) 10HQ (Includes Bearing).
18	210D211	1	Parts Key No. 6 (15, 000 Watt Plants) 15HQ (Includes Bearing).
18A	210C236	1	Bearing, Armature Ball - Parts Key No. 6.
19	212C197	1	Frame Only -
	212C201	1	Parts Key Nos. 1 through 5 (Exciter).
	212C1141	1	Parts Key No. 6 (10, 000 Watt Plants) 10HQ.
20	312A17	1	Parts Key No. 6 (15, 000 Watt Plants) 15HQ.
21	312A58	1	Rig Assembly, Brush - Commutator -
	211C92	1	Parts Key Nos. 1 through 5 (Exciter).
22	214A44	4	Parts Key No. 6.
23	214A49	4	Holder, Brush Rig - Parts Key Nos. 1 through 5 (Exciter Rig).
	214A46	4	Condenser - Parts Key Nos. 1 through 5 -
24	212B1105	8	Parts Key Nos. 1 through 5 (Commutator Brush) 0.5 Mfd.
25	212B1106	4	Parts Key No. 1 through 5 (Slip Ring Brush) 0.1 Mfd - Replaces 312A15.
	232B1205	1	Cover, Exciter End - Parts Key Nos. 1 through 5.
26	212A1142	4	Brush, Commutator (DC) -
27			Parts Key Nos. 1 through 5 (Exciter).
			Parts Key No. 6.
			Brush, Slip Ring (AC) Alternator - Parts Key Nos. 1 through 5.
			Spring, Brush - Constant Pressure Type -
			Parts Key Nos. 1 through 5 - (4) Commutator Brush, (4) Slip Ring Brush.
			Parts Key No. 6.
			Washer, Armature Centering - Parts Key Nos. 1 through 5.
			Clamp, Brush Rig Mounting (Exciter Rig) Parts Key Nos. 1 through 5.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 25 - GENERATOR GROUP - REMOVABLE TYPE EXCITER ARMATURE (Cont.)

28	222A1396	1	Coil Assembly, Interpole - Set of 2 Coil -
	222A1377	1	Parts Key No. 6 (10,000 Watt Plant) 10HQ.
29	211D90	1	Parts Key No. 6 (15,000 Watt Plant) 15HQ.
30	232A601	1	Bell, End - Parts Key No. 6.
		1	Cover, Bearing - Parts Key No. 6.
31	232B1116	1	Screech, Generator Air Outlet (Fastens to Generator to Engine Adapter) -
31A	234B78	1	Parts Key No. 6.
32	232A615	1	Parts Key Nos. 1 through 5 Begin with Spec F.
	403A95	1	Clip, Armature Bearing Stop - Parts Key No. 6.
33		1	Eyebolt, Lifting - OPTIONAL.

SERVICE KITS & MISCELLANEOUS

	(CO)F400T-155	2	*Bearing Kit, Connecting Rod - Upper and Lower - Standard -
	(CO)F400T-159	2	Cylinders 1 and 3.
	185-825	1	Cylinders 2 and 4.
		1	Complete Engine - (CO)F400T-152.
	(CO)F600T-227	1	*Bearing Kit, Crankshaft - Upper and Lower - Standard -
	(CO)F600T-223	1	Front (Includes Thrust Washer and F600G-3491 Bearing).
	(CO)F400T-169	1	Rear (Same as F600G-3471).
	(CO)F400T-182	1	Center (Same as F400G-3111).
		1	Complete Engine.
			Gasket Kit -
	143K60	1	Carburetor Gaskets.
	168K58	1	Complete Plant Gaskets.
	(CO)F162U-119	1	Engine only Gaskets (For Complete Plant, see Onan #168K58).
	522K132	1	Overhaul Kit, Plant - 12 Volt Cranked Plants only -
	522K167	1	Specs B, C and D only (Fairbanks Morse Magneto Ignition).
			Begin Spec E (Battery Ignition).

* - Refer to "Oversize and Undersize" Chart.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
			SERVICE KITS & MISCELLANEOUS (Cont.)
			Repair Parts Kit -
	143K65	1	Carburetor Repair.
	149K508	1	Fuel Pump Repair (Replaces #149K75).
	(CO)F600T-293	1	Oil Pump Repair.
	(CO)F400T-202	1	Water Pump Repair - For Pump F400K-3941.
			*Ring Kit, Piston - Standard Size - 4 Piston -
	185-820	1	For Re-Ring Only (Expander Type) - (CO)F162T-152C.
	(CO)F162T-153C	1	For Re-Bore Only - (F162T-152C Printed in error).
	525P90		Paint, Touch-Up (Pressurized Can) 12 Ounce - Mouse Gray Enamel.
	525P137	1	Paint, Green Touch-up Enamel - 16 Ounce (Pressurized Can).

* - Refer to "Oversize and Undersize" Chart.

SPECIAL PURPOSE SECTION FOR HQ SERIES

PENNSYLVANIA APPROVED GENERATING PLANTS

The parts contained in this section of the catalog apply to the Onan HQ Series "PENNSYLVANIA APPROVED" Generating Plants.

The "Pennsylvania Approved" generating plant is a term applied to a plant designed to meet the rigid requirements published by the Commonwealth of Pennsylvania, Department of Labor and Industry, as contained in "REGULATIONS FOR PROTECTION FROM FIRE AND PANIC". "Standby" service generating plants (the source supplying energy for lighting when the normal source fails) are subject to those regulations when located in the area under its jurisdiction. These plants are quickly recognized by the number 30 appearing in the model of gasoline fuel plants or by the number 31 appearing in the model of gaseous fuel plants.

All "Pennsylvania Approved" plants are special models, and are 36-volt exciter cranked.

REFER FIRST TO THIS SEPARATE SUPPLEMENTARY LISTING OF SPECIAL PARTS FOR "PENNSYLVANIA APPROVED" PLANTS. IF THE PART CAN NOT BE FOUND IN THIS SECTION, REFER TO THE FOREGOING MAIN ILLUSTRATED LIST FOR ORDINARY MODELS.

Parts in this section apply to the following "Pennsylvania Approved" plants. For plants of other designs, use this list as a guide only. Select parts according to the Parts Key Number listed for each model. If it is necessary to refer back to the Main List for some parts, remember the correct parts key for your unit as listed in this Plant Data Table.

Plant Data Table

MODEL & SPEC NO. ★		ELECTRICAL DATA					PARTS KEY NO.
HOUSED	UNHOUSED	WATTS	VOLTS	CYCLES	PHASE	WIRE	
10HQ-1R30/	10HQ-1R8/30	10,000	120	60	1	2	1.
10HQ-1R31/	10HQ-1R8/31	10,000	120	60	1	2	
10HQ-3R30/	10HQ-3R8/30	10,000	120/240	60	1	3	
10HQ-3R31/	10HQ-3R8/31	10,000	120/240	60	1	3	
15HQ-1R30/	15HQ-1R8/30	15,000	120	60	1	2	
15HQ-1R31/	15HQ-1R8/31	15,000	120	60	1	2	
15HQ-3R30/	15HQ-3R8/30	15,000	120/240	60	1	3	
15HQ-3R31/	15HQ-3R8/31	15,000	120/240	60	1	3	
10HQ-4R30/	10HQ-4R8/30	10,000	120/208	60	3	4	2.
10HQ-4R31/	10HQ-4R8/31	10,000	120/208	60	3	4	
15HQ-4R30/	15HQ-4R8/30	15,000	120/208	60	3	4	
15HQ-4R31/	15HQ-4R8/31	15,000	120/208	60	3	4	

★ - Specification numbers 30 (Gasoline Fuel Plant), and 31 (Gaseous Fuel Plant) may appear just before the diagonal line or just after the diagonal line (/). Standard unhooused units with no additional special features appear as in table, however if a unhooused unit has additional special features the number 8 before the diagonal line is deleted in favor of a number 30 or 31. (Example: an unhooused Standard Pennsylvania Approved model 10HQ-4R8/30 becomes a 10HQ-4R30/961 when an Optional Meter Panel is added. The number 961 designates that the unit is unhooused and that it has a Meter Panel).

The last letter in the Model Designation (10HQ-4R8/31E) is the Spec (Specification) Letter. This letter advances with manufacturing changes, (A to B, B to C, etc.).

Parts in this section of the catalog are not illustrated. However if a part description is questionable, reference to the standard parts illustration and its respective description will aid in selecting the part described in this section. Also, control parts ordered should agree with the wiring diagram for that particular model.

ORIENTATION

General changes by the manufacturer which resulted in a model spec advance, include the following for Pennsylvania Approved Plants:

MODEL SPEC "A". - Original design.

MODEL SPEC "B". - Ignition changed from Wico Magneto using separate shielding, to Fairbanks Morse Magneto integrally shielded.

MODEL SPEC "C". - Generator changed, from exciter armature on same shaft with alternator rotor, to exciter armature (exciter #10) on separate shaft and removable from alternator rotor.

Control changed for use with low and high charge rate line transfer control. On unhooused plants, output ammeter discontinued from standard equipment.

MODEL SPEC "D". - On gas fuel plants, relay added to control panel for controlling solenoid valve in gas fuel supply line.

On gasoline fuel plants, relay added to control panel for controlling choke.

MODEL SPEC "E". - Ignition system changed to battery ignition in place of magneto ignition.

On unhooused plants, control panel redesigned.

MODEL SPEC "F". - Intake and Exhaust Manifold changed from DOWN exhaust to UP exhaust. New style Housings, Controls and Generator Adapter on both Housed and Unhooused plants.

MODEL SPEC "G". - Charge Generator, Regulator, and Ammeter changed to a 30 amp system. New starting motor has solenoid and mounting bracket separate. Changed Start-Stop Switch and lower Engine Control Panel.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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SUPPLEMENT TO FIG. 9 (FUEL SYSTEM GROUP - GASOLINE)

NOTE: Use these parts in place of (or in addition to) parts listed in the main illustrated list. For gasoline fuel plants.

153P119	1	Choke, Automatic - Sisson 32 Volt.
153A52	1	Cover, Onan Choke (32-40 Volt heating element) Use only on plants with Special Water Cooled Manifold.

SUPPLEMENT TO FIG. 12 (FUEL SYSTEM GROUP - GAS ONLY)

NOTE: Use these parts in place of (or in addition to) parts listed in the main illustrated list. For gaseous fuel plants.

338B141	1	Harness Assembly, Wiring - Gas Solenoid Valve.
307P387	1	Valve, Gas Solenoid - Gas Fuel Pipeline - (Standard Begin Spec D, Optional Prior) Listed also in Control group.
149-558	1	Strainer, Gas Fuel - In Gas Supply Line (Standard Begin Spec D, Optional Prior).

DAY TANK GROUP - COMPLETE (Gasoline Plants)

NOTE: This group is similar to items listed in Fig. 13 of the main list, however this group is complete and it is not necessary to refer elsewhere for part numbers.

159A540	1	Tank Assembly, Reservoir (Day) Includes parts marked * - Prior to Spec F (Unhoused Plants).
159A542	1	Prior to Spec F (Housed Plants).
159A664	1	Prior to Serial #643150 Spec F Models only (Housed or Unhoused) Includes Parts marked * or †.
159A737	1	Begin Serial #643150 during Spec F (Housed or Unhoused) Includes Parts marked *, † or ‡.
159B294	1	*Tank, Reservoir ("Day" or "Standby") -
159A121	1	*Band, Reservoir Tank - Prior to Spec F.
159A641	1	Begin Spec F.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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DAY TANK GROUP - COMPLETE (Gasoline Plants) Cont.

159B302	1	*Bracket, Reservoir Tank Mounting - Prior to Spec F (Housed Plants).	
159A419	1	Prior to Spec F (Unhoused Plants).	
159A657	1	Begin Spec F (Housed or Unhoused).	
502-24	As Req.	*Elbow, Male Compression (Not used for Fuel Inlet on Housed Plants Prior Spec F).	
502-20	1	*Elbow, Street (Fuel Inlet) Housed Plants Prior to Spec F.	
		*Bushing, Pipe Reducer -	
505-17	1	Prior to Serial #643150.	
159A705	1	Begin Serial #643150 (Restricted)	
504A13	1	*Valve, Fuel Shut-off -	
504A39	1	Prior to Spec F (Housed Plants).	
		Prior to Serial #643150 Spec F Models only (Housed or Unhoused) Also Prior to Spec F Unhoused Plants.	
505-57	2	*Plug, Pipe - Drain (Square Head - 1/8") (NOTE: Quantity is 1 only Prior to Serial #643150)	
159A345	1	Tubing, Copper (5/16" x 12 feet) Vent Line - Prior to Serial #643150.	
502-116	1	Connector, Compression - Includes Nut & Sleeve (Vent Line) - Prior to Serial #643150.	
505-28	1	Coupling, Pipe (3/8") Vent Line - Prior to Serial #643150.	
505-16	1	Bushing, Pipe Reducer (3/8 to 1/8") Vent Line - Prior to Serial #643150.	
		Line, Fuel - Pump to Reservoir Tank -	
149A521	1	Prior to Spec F (Unhoused Plants).	
501A7	1	Prior to Spec F (Housed Plants) Flexible.	
159A656	1	†Begin Spec F (Housed or Unhoused).	
		Line, Fuel - Reservoir Tank to Carburetor -	
149A522	1	Prior to Spec F (Unhoused Plants).	
501A7	1	Prior to Spec F (Housed Plants) Flexible.	
159C655	1	†Begin Spec F (Housed or Unhoused).	
159-41	1	Cap, Vent - Prior to Serial #643150.	
415A55	1	Bracket, Vent Cap - Prior to Serial #643150.	
307P567	1	Valve, Solenoid - Reservoir Tank - Begin Serial #643150.	
502-82	1	Nipple, Hex - Solenoid Valve to Tank - Begin Serial #643150.	
501A5	1	Line, Fuel Return - Flexible - Begin Serial #643150.	
502-2	1	Elbow, Inverted Male - Fuel Return Line to Restricted Fitting - Begin Serial #643150.	

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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SUPPLEMENT TO FIG. 15 (BATTERY IGNITION GROUP) Begin Spec E

NOTE: Use this part in place of coil listed in main illustrated list.

166P184	1	Coil, Ignition - 24 Volt.
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SUPPLEMENT TO FIG. 17 (COOLING SYSTEM AND MOUNTING GROUP)

NOTE: Use this part in place of Fan Belt listed in main illustrated list.

511-31	1	Belt, Fan (43-1/2") Plant DOES NOT have Charge Generator.
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SUPPLEMENT TO FIG. 18 (STARTING MOTOR AND CHARGE GENERATOR GROUP)

NOTE: Use these parts in place of (or in addition to) parts listed in main illustrated list.

416A133	5	Cable, Battery Jumper - 7-1/2".
416A37	2	Cable, Battery - 48".

SUPPLEMENT TO FIG. 19 (HOUSING GROUP - HOUSED PLANTS PRIOR TO SPEC F)

NOTE: Use these parts in place of (or in addition to) parts listed in main illustrated list.

130C329	1	Guard, Fan -
130C342	1	Left Hand.
		Right Hand (No provision for charging generator).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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SUPPLEMENT TO FIG. 20 (MOUNTING GROUP - UNHOUSED PLANTS PRIOR TO SPEC F)

NOTE: Use this part in place of part listed in main illustrated list.

130C331	1	Guard, Fan - Right Hand (No provision for charging generator).
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VOLTAGE REGULATOR GROUP (36 Volt Cranked Plants) COMPLETE

NOTE: This group is similar to items listed in Fig. 21 of the main list, however this group is complete and it is not necessary to refer elsewhere for part numbers.

305P59	1	Plug-In Unit, Voltage Regulator.
303-64	1	Rheostat, Voltage Regulator - Model "H" -
303-65	1	Prior to Spec C (500 Ohm).
303-32	1	Begin Spec C (250 Ohm).
305C146	1	Knob, Rheostat.
312A58	1	Base Assembly, Rheostat.
305A144	4	Condenser, Suppression - 0.1 Mfd. - Begin Spec D - Replaces 312A15.
508-31	4	Spacer, Regulator Mounting.
		Grommet, Rubber - Regulator Mounting.

CONTROL GROUP - HOUSED PLANTS - COMPLETE

NOTE: This group is similar to items listed in Figs. 22 and 22A of the main list, however this group is complete and it is not necessary to refer elsewhere for part numbers.

301C1037	1	Panel Only - Engine Control Portion -
301C1491	1	Prior to Spec E.
★	1	Spec E Only.
		Begin Spec F. (★ - Order by description. Include complete Model and Serial Number of Plant).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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CONTROL GROUP - HOUSED PLANTS - COMPLETE (Cont.)

Panel Only - AC Meter Portion -

301C1038	1	Prior to Spec F -
301C1054	1	Parts Key No. 1 (115 Volt Plants Only), and Parts Key No. 2, Parts Key No. 1 (115/230 Volt Plants only).

Begin Spec F -

301C1356	1	Parts Key No. 1 (115/230 Volt Plants only).
301C1374	1	Parts Key No. 2.

Box, Control - Begin Spec F.

301D1106	1	Switch, Panel Light - Prior to Spec F.
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Receptacle, Panel Light -

308-2	1	Prior to Spec F.
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Begin Spec F (Includes Switch).

322-5	1	Lamp, Panel Light -
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Prior to Spec F.

322-4	1	Begin Spec F.
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Begin Spec F.

322-26	1	Gauge, Engine Oil Pressure (Mechanical) Includes "U" Clamp.
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193P5	1	Gauge, Water Temperature (Thermostatic) Includes Clamp.
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193P8	1	Voltmeter, AC (Select according to rating) -
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302P420	1	0-150 - Replaces 302-40.
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302P421	1	0-300 - Replaces 302-41.
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302P404	1	Ammeter, AC (Select according to rating) -
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302P406	1	0-35 - Replaces 302-124.
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302P408	1	0-75 - Replaces 302-9.
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302P409	1	0-100 - Replaces 302-11.
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302P410	1	0-140 - Replaces 302-126.
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302P411	1	0-150 - Replaces 302-12.
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302P411	1	0-200 - Replaces 302B13.
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As Req.

302B123	1	Transformer, Current (Check Current Transformer Nameplate for rating) -
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302B76	1	35/5 Ratio (Use with 0-35 AC Ammeter).
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302B78	1	75/5 Ratio (Use with 0-75 AC Ammeter).
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302B125	1	100/5 Ratio (Use with 0-100 AC Ammeter).
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302B79	1	140/5 Ratio (Use with 0-140 AC Ammeter).
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302B106	1	150/5 Ratio (Use with 0-150 AC Ammeter).
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302B106	1	200/5 Ratio (Use with 0-200 AC Ammeter).
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PENNSYLVANIA APPROVED

REF. NO. PART NO. QUANT. USED

DESCRIPTION

CONTROL GROUP - HOUSED PLANTS - COMPLETE (Cont.)

315B2	1	Transformer, Potential - Adapts AC Voltage Regulator - Parts Key No. 1 (115 Volt Plant only).
302P68	1	Meter, Running Time.
301C446	1	Panel, Running Time Meter Mounting (Mounts to Housing Rear End Cover) Prior to Spec F.
308B22	1	Switch, Meter Selector - Parts Key No. 2.
		Resistor -
304-223	1	Panel Light Circuit (200 Ohm, 10 Watt) 5/16" x 1-3/4" (Between Panel Light and Switch).
304-99	1	Running Time Meter Circuit (5,000 Ohm, 10 Watt) 5/16" x 1-3/4".
304-62	1	Manual Field Rheostat Circuit (25 Ohm, 25 Watt) 3/4" x 2" - Prior to Spec E.
304-19	1	Start Circuit (3 Ohm, 50 Watt) 3/4" x 4" (Between Start-Stop Switch and Terminal Block No. 6 Place).
304A11	1	Stop Circuit (50 Ohm, 25 Watt) 9/16" x 2" (Between Start-Stop Switch and Terminal Block No. 7 Place).
304A37	1	Ignition Circuit (6 Ohm, 75 Watt) 3/4" x 6" (Between Start-Stop Switch and Terminal Block No. 8 Place) Begin Spec E.
304A112	1	Choke Relay Circuit - Adjustable (100 Ohm, 25 Watt) 9/16" x 2" (Between Choke Relay and Start-Stop Switch) Begin Spec D on Gasoline Fuel Plants only.
304A121	1	Solenoid Valve Circuit - Gas Fuel Plants only - Spec D only (10 Ohm, 10 Watt) 5/16 x 1-3/4".
304P32	1	Solenoid Valve Circuit - Gas Fuel Plants only - Begin Spec E (15 Ohm, 10 Watt) Start-Stop Relay to Terminal Block No. 5 Place.
		Switch, Start-Stop -
308-9	1	Prior to Spec E (Push Button Type).
308-26	1	Begin Spec E.
		Switch, Toggle -
308B68	1	Prior to Spec C (Regulator On - Rheostat On).
308-2	1	Begin Spec E (Electric Start-Hand Crank).
338B141	1	Harness Assembly, Wiring - Start Solenoid.
306A98	1	Relay, Stop - Prior to Spec E.
306A139	1	Relay, Start-Stop - Begin Spec E.
307B4	1	Relay, Choke - Gasoline Fuel Plants Only - Begin Spec D.
307B234	1	Solenoid, Start.
307P387	1	Valve, Gas Fuel Solenoid (Gaseous Fuel Plants) Standard Begin Spec D, Optional Prior.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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CONTROL GROUP - HOUSED PLANTS - COMPLETE (Cont.)

		As Req.	Block, Terminal (Select by description) - 5 Place (3-25/32" Long). 4 Place (2-1/2" Long) Designated B+, 1, 2, 3. 4 Place (3-7/32" Long). 3 or 4 Place (Specify Phase & Voltage) 13-3/8" Long strip with 3 or 4 holes (Begin Spec F). 3 Place (7" Long strip with 3 holes). 3 Place (2-11/16" Long). 1 Place - Moulded (1-3/4" x 2-1/8" x 1-1/2" tall) With hole for Output Stud. Strip, Terminal Block Marker (Select by description) - For 5 Place Block (Marked 4, 5, 6, 7, 8). For 4 Place, 3-7/32" Block (Marked 4, 5, 6, 7). For 4 Place, 3-7/32" Block (Marked 2, 3, 4, 5). For 3 Place, 2-11/16" Block (No markings). Stud, Output Terminal - Prior to Spec F - 3/8-16 x 3-1/4" (Insulated). 3/8-16 x 2-1/2 (Grounded). Bushing, Adapter - For 1 Place Moulded Block - Prior to Spec F. Terminal, Output Stud - Solderless - Prior to Spec F. Condenser - 0.1 Mfd. - Output Suppression - Parts Key No. 1 - (1) 115 Volt, (2) 230 Volt - Replaces 312A15. Parts Key No. 2. Rheostat, Field - Manual Voltage Control (Note: Regulator Rheostat in Separate group) - For Plants Prior to Spec C having #304-62 Resistor (200 Ohm). For Plants Prior to Spec C NOT having #304-62 Resistor (300 Ohm). For Plants Begin Spec C (Includes #308P131 Switch) 100 Ohm. Switch, Rheostat - Begin Spec C (Included with #303P92 Rheostat). Knob, Field Rheostat. Clamp, Current Transformer Mounting - Begin Spec F - Inside of Coil - 1 per coil. Outside of Coil - 1 per coil. Grommet, Rubber (2-1/4 x 3-3/8 x 1/4") For 2-3/4" Hole.	
332A532				
332A18				
332A391				
332A513				
332A188				
332A406				
332A21				
332A575				
332A427				
332A574				
332A426				
332A19		As Req.		
332A56		As Req.		
332A23		As Req.		
332A230		As Req.		
312A58		As Req.		
312A22		3		
303-69		1		
303-31		1		
303P92		1		
308P131		1		
303-32		1		
302A235		As Req.		
302A236		As Req.		
508P63		1		

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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CONTROL GROUP - HOUSED PLANTS - COMPLETE (Cont.)

302A108	1	Panel, Current Transformer Coil Mounting - Prior to Spec F -
302A109	1	Parts Key No. 1 (8-1/2 x 3 x 1/4" Bakelite).
302A127	2	Bracket, Current Transformer Coil Panel Mounting - Prior to Spec F -
302A128	2	Parts Key No. 1.
302A154	As Req.	Parts Key No. 2.
501A9	1	Hook, Current Transformer Coil Mounting (2 per Coil) - Prior to Spec F.
502-20	1	Line, Flexible - 36" - Oil Gauge.
		Elbow, Street - Oil Gauge Line.

CONTROL GROUP - UNHOUSED PLANTS - COMPLETE

NOTE: This group is similar to Fig. 23 of the main list, however this group is complete and it is not necessary to refer elsewhere for part numbers except if Unit has an optional Meter Panel select AC Ammeter, Current Transformers etc. from the preceding Housed Plant Control Group.

301D1004	1	Box, Control -
301D1173	1	Prior to Spec C.
301D1106	1	Spec C and D.
		Begin Spec E.
301C1053	1	Panel, Control (Upper) WITH provisions for AC Output Ammeter (Standard equipment Prior to Spec C, Optional equipment Begin Spec C) -
301C975	1	Parts Key No. 1 (115 Volt Plant only) Prior Spec C.
301C889	1	Parts Key No. 1 (115/230 Volt Plant only) Prior Spec C.
301C1374	1	Parts Key No. 2 Prior Spec C.
		Parts Key Nos. 1 and 2 Begin Spec E.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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CONTROL GROUP - UNHOUSED PLANTS - COMPLETE (Cont.)

			Panel, Control (Upper) NO provisions for AC Output Ammeter (Standard equipment Begin Spec C) -	
			Parts Key No. 1 (115 Volt Plant only) Spec C and D.	
301C1308	1		Parts Key No. 1 (115/230 Volt Plant Only) Spec C and D.	
301C1022	1		Parts Key No. 2 Spec C and D.	
301C1280	1		Parts Key Nos. 1 and 2 Begin Spec E.	
301C1317	1		Panel, Control (Lower) -	
			Prior to Spec C.	
301C926	1		Spec C and D.	
301C1196	1		Spec E.	
301C1490	1		Begin Spec F (★ - Order by description. Include complete Model and Serial Number of plant).	
★	1		Cover, Manual Rheostat Knob - Begin with Serial #503547.	
301A1061	1		Cover, Regulator On-Rheostat On Switch - Spec B Plants Prior to Serial #503547.	
301A1062	1		Cover, Output Lead (Front of Control Box) Begin Spec E.	
301B1136	1		Bracket, Control Box Mounting -	
			Left Hand Bracket -	
			Prior to Spec C.	
301B925	1		Spec C and D.	
301B1145	1		Begin Spec E.	
301B1124	1		Right Hand Bracket -	
			Prior to Spec C.	
301B960	1		Spec C and D.	
301B1144	1		Begin Spec E.	
301B1125	1		Rheostat, Field - Manual Voltage Control (Note: Regulator Rheostat in Separate Group) -	
			For Plants Prior to Spec C having #304-62 Resistor (200 Ohm).	
303-69	1		For Plants Prior to Spec C NOT having #304-62 Resistor (300 Ohm).	
303-31	1		For Plants Begin Spec C (Includes #308P131 Switch) 100 Ohm.	
303P92	1		Switch, Rheostat - Begin Spec C (Included with #303P92 Rheostat).	
308P131	1		Knob, Field Rheostat.	
303-32	1		Switch, Start-Stop.	
308-26	1		Switch, Toggle -	
			Spec B Plants Prior to Serial #503547 (Regulator On-Rheostat On).	
308B68	1		Electric Start - Hand Crank.	
308-2	1			

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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CONTROL GROUP - UNHOUSED PLANTS - COMPLETE (Cont.)

306A98	1	Relay, Stop - Prior to Spec E.
302A235	As Req.	Clamp, Current Transformer - For plants having Output Ammeters (Prior to Spec C) - Inside of Coll - 1 Per Coll.
302A236	As Req.	Outside of Coll - 1 Per Coll.
302P420	1	Voltmeter, AC (Select according to rating) - 0-150 - Replaces 302-40.
302P421	1	0-300 - Replaces 302-41.
308B22	1	Switch, Ammeter Selector - For Plants having Output Ammeters-Parts Key No. 2 Prior to Spec C.
308-12	1	Switch, Voltmeter Selector - For Plants having Output Ammeters - Parts Key No. 2 Begin Spec C.
332A440	2	Jumper, Output Terminal - Parts Key No. 1.
193P6	1	Gauge, Oil Pressure - Mechanical.
315B2	1	Transformer, Potential - Adapts AC Voltage Regulator - Parts Key No. 1 (115 Volt Plants only).
307B4	1	Relay, Choke - Used only with Sisson Choke, NOT with Onan Choke - Gasoline Fuel Plants only.
308A139	1	Relay, Gas Fuel Solenoid Valve - Standard Equipment begin Spec D, Optional Prior - Gaseous Fuel Plants only.
307B234	1	Solenoid, Start.
301C1001	1	Cover, Start Solenoid.
301A1005	1	Cover, Start Solenoid Plate.
307A272	1	Bracket, Start Solenoid Mounting.
307P387	1	Valve, Gas Fuel Solenoid - Standard Equipment begin Spec D, optional Prior - Gaseous Fuel Plants only.
508P63	1	Grommet, Rubber (2-1/4 x 3-3/8 x 1/4") For 2-3/4" Hole - Begin Spec E.
312A58	As Req.	Condenser - 0.1 Mfd. - Output Suppression - Begin Spec D - Replaces 312A15.
304-62	1	Resistor - Manual Field Rheostat Circuit (25 Ohm, 25 Watt) 3/4 x 2" (Used with Rheostat #303-69) Prior to Spec C.
304-19	1	Start Circuit (3 Ohm, 50 Watt) 3/4 x 4".
304A11	1	Stop Circuit (50 Ohm, 25 Watt) 9/16 x 2" (Note: 1 additional also used on plants with Solenoid Valve Relay).
304-112	1	Choke Relay Circuit (100 Ohm, 25 Watt) 9/16 x 2" Adjustable (Gasoline Fuel Plants Only).
304A121	1	Solenoid Valve Circuit (10 Ohm, 10 Watt) 5/16 x 1-3/4" - Gaseous Fuel Plants only (Standard Begin Spec D, Optional Prior).
304A37	1	Ignition Circuit (6 Ohm, 75 Watt) 3/4 x 6" (Begin Spec E).

PENNSYLVANIA APPROVED

DESCRIPTION

QUANT.
USEDPART
NO.REF.
NO.

CONTROL GROUP - UNHOUSED PLANTS - COMPLETE (Cont.)

As Req.	Block, Terminal (Select by description) -
1	4 Place (3-7/32" Long).
1	4 Place - Output Terminal Prior Spec E (6-1/4" Long).
1	3 or 4 Place - Output Terminal Begin Spec E (Specify Phase & Voltage) 13-3/8" Long strip with 3 or 4 holes.
1	3 Place (2-11/16" Long) Connection for Solenoid Valve or Choke Begin Spec D.
1	2 Place (2-3/32" Long).
	Strip, Terminal Block Marker (Select by description) -
1	For 4 Place, 3-7/32" Block (Marked B+, 1, 2, 3).
1	For 4 Place, 6-1/4" Block (Marked T1, T2, T3, T0) Parts Key No. 4 Prior to Spec E.
1	For 4 Place, 6-1/4" Block (Marked T1, T2, T3, T4) Parts Key No. 1 (115/230 Volt only) Prior to Spec E.
1	For 4 Place, 6-1/4" Block (Marked T1, T2) Parts Key No. 1 (115 Volt only) Prior to Spec E.
1	For 3 Place, 2-11/16" Block (No Markings) Begin Spec D.
1	For 2 Place, 2-3/32" Block (No Markings).

GENERATOR GROUP - NON-REMOVABLE TYPE EXCITER ARMATURE - COMPLETE (SPEC A and B ONLY)

NOTE: This group is similar to Fig. 24 of the main list, however this group is complete and it is not necessary to refer elsewhere for part numbers.

★	1	Coil Set, Exciter Field.
221A50	4	Poleshoe, Exciter.
232B630	1	Band, End Bell.
		Cover, Outlet -
232A746	1	Housed Plants.
232A1038	1	Unhoused Plants.
232B55	1	Cover, Bearing.
232B57	1	Gasket, Bearing Cover.

★ - Order by description. Include complete Model and Serial Number of Plant.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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GENERATOR GROUP - NON-REMOVABLE TYPE EXCITER ARMATURE - COMPLETE (SPEC A and B ONLY) Cont.

232A615	1	Clip, Bearing - Anti-Rotation.
211D42	1	Bell, End.
212C187	1	Rig Assembly, Brush - Includes Brushes and Springs.
★	1	Frame Only, Exciter.
★	1	Stator Assembly, Wound.
★	1	Rotor Assembly, Wound - Includes Bearing.
232B165	1	Scroll, Air.
205B33	1	Blower, Air.
231D11	1	Adapter, Generator to Engine.
★	1	Band, Alternator Frame - Top or Bottom.
510A52	1	Bearing, Ball - Double Sealed, Pre-lubricated.
232A619	2	Screen, Air Intake.
212B1105	4	Spring, Brush - Constant Pressure Type -
212B1106	4	Slip Ring Brush.
		Commutator Brush.
214A46	4	Brush -
214A47	4	Collector Rings.
403A95	1	Commutator.
231D29	1	Bolt, Lifting Eye.
		Adapter, End Bell to Alternator.
		Condenser -
312A47	1	Commutator Brush - 0.5 Mfd.
312A58	1	Slip Ring Brush - 0.1 Mfd. (When Used) - Replaces 312A15.

★ - Order by description. Include complete Model and Serial Number of Plant.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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GENERATOR GROUP - REMOVABLE TYPE EXCITER ARMATURE - COMPLETE (BEGIN SPEC C)

NOTE: This group is similar to Fig. 25 of the main list, however this group is complete and it is not necessary to refer elsewhere for part numbers.

			Adapter, Generator to Engine -	
			Spec C, D and E.	
			Begin Spec F.	
			Blower, Air.	
			Scroll, Air.	
			Rotor Assembly, Alternator - Includes Bearing.	
			Key, Armature to Rotor Shaft.	
			Stator Assembly, Wound.	
			Bearing, Ball - Alternator Rotor.	
			Band, Alternator Frame - Top or Bottom.	
			Rig Assembly, Brush - Alternator.	
			Anti-Rotation Device, Bearing - Alternator Rotor Bearing.	
			Spring, Anti-Rotation Device.	
			Belt, Alternator End.	
			Coil Set, Exciter Field - Set of 4 Colls.	
			Shoe, Exciter Pole.	
			Cover, Hand Hole - Alternator End Bell -	
			Upper Left and Right.	
			Lower Left and Right (Screened).	
			Top - Outlet Lead.	
			Armature, Exciter.	
			Frame Only, Exciter.	
			Rig Assembly, Exciter Brush.	
			Holder, Exciter Brush Rig.	
			Condenser -	
			Commutator Brush - 0.5 Mfd.	
			Slip Ring Brush - 0.1 Mfd. (Where Used) - Replaces 312A15.	
			Cover, Exciter End.	

★ - Order by description. Include complete Model and Serial Number of Plant.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION	PENNSYLVANIA APPROVED
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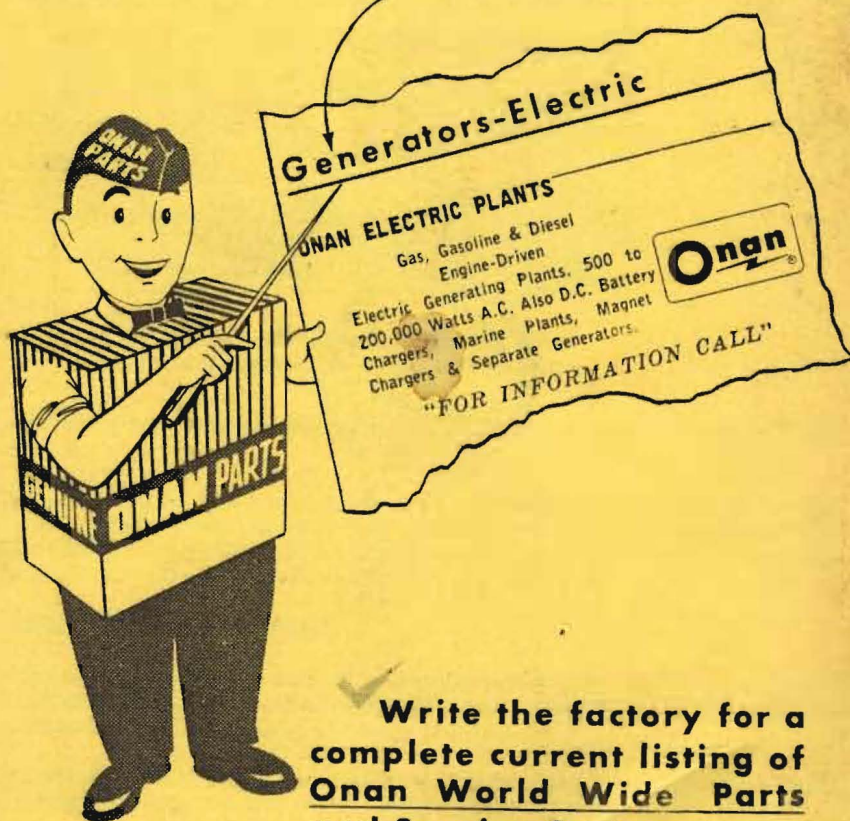
GENERATOR GROUP - REMOVABLE TYPE EXCITER ARMATURE - COMPLETE (BEGIN SPEC C) Cont.

214A17	4	Brush, Commutator (DC) Exciter.
214A46	4	Brush, Slip Ring (AC) Alternator.
		Spring, Brush -
212A1011	4	Commutator Brush - Exciter.
212B1105	4	Slip Ring Brush - Alternator.
232B1205	1	Washer, Armature Centering.
212A1142	4	Clamp, Exciter Brush Rig Mounting.



1AG63

For Genuine Onan Parts and Service, see your Onan Parts and Service Center. In most major cities they are listed in the classified section of the telephone directory. See Generators-Electric.



Write the factory for a complete current listing of Onan World Wide Parts and Service Centers.